

STATE OF COLORADO)
COUNTY OF EAGLE) ss

IN THE DISTRICT COURT.

In the matter of the application of the)
Glenwood Light and Water Company a Cor-)
poration, for the adjudication of its)
priority of right to the use of water)
for domestic and other purposes from) No. 422-477-553
Grizzly Creek in Water District No. 83,) FINDINGS AND DECREE.
Garfield County, Colorado;)
and)
In the matter of the adjudication of)
priorities of water rights in Water Dis-)
trict No. 83, in the State of Colorado,)
for beneficial purposes other than)
Irrigation.)

Now on this 27th day of February A.D. 1911, this matter coming on for hearing and adjudication before the Court upon the petition of the Central Colorado Power Company, one of the claimants herein, to make final and absolute its decree heretofore rendered concerning the Glenwood Power Canal and Pipe Line and upon the Supplemental Statement of Claim of said Company as to said Glenwood Power Canal and Pipe Line, pursuant to an order made by this Court entered on the 14th day of November A.D. 1910, said The Central Colorado Power Company appearing by J.E. Adams and C.E. Taylor, its Counsel Frank W. Allen and John Thomas appearing by C.S. Rowe, their Counsel and the Town of Glenwood Springs appearing by E.J. De Lan, Esq., its Counsel and to the claims of the Central Colorado Power Company having been duly considered and dismissed by the Court and there being no objections or exceptions to the hearing of the evidence concerning said Glenwood Power Canal and Pipe Line or to the entry of the findings and decree concerning the same hereinafter referred to; said hearing having been commenced on Monday the 27th day of February A.D. 1911 at 10 o'clock A.M. at the Court House at Red Cliff, Eagle County, Colorado, pursuant to said order of this Court, dated November 14th 1910, and

It further appearing to the Court and the Court doth find that notice thereof was given in manner and form and within the time as provided in said order by the Clerk of this Court by publishing said notice in not less than one public newspaper in each of the counties

*This is
just a readjudication
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0349*

into which Water District No. 63, State of Colorado, extends, namely; the counties of Eagle, Grand, Routt, and Garfield; that said notice contained a copy of said order of November 14th 1910 and was published in such papers not less than once each week, until four successive weekly publications had been made; the last of which was made and published in each case upon a day previous to the day fixed for the commencement of said hearing; that the said notice so published in Eagle County was published in the Eagle County Blade; that the said notice so published in Grand County was published in the Kremling News and Middle Park times; that said notice so published in Routt County was published in the Steamboat Pilot; that said notice so published in Garfield County was in the Glenwood Post; that each and all of said newspapers are published ~~in~~ within the State of Colorado, having been published continuously and uninterruptedly in each of said counties ^{consecutive} during a period of more than twenty-six weeks prior to the first publication of each of said notices and were and are newspapers within the meaning and requirements of the laws of the State of Colorado; and

It further appearing to the Court and the Court doth find that said notice was also served upon all such parties to this action who have filed statements of claim or claims in this proceeding, claiming priority or priorities of right to the use of water for beneficial purposes in said Water District No. 63 at least ten days prior to the time of said hearing; that the only party or parties who have filed any statement or statements of claim or claims in this proceedings and who thereby entitled to notice other than posting or publication were and are The Glenwood Light and Water Company and the Town of Glenwood Springs and D. Broughton; that said parties and each thereof were duly served with said notice within the time and in accordance with the provisions of said order; and

It further appearing to the Court and the Court doth find that ten printed copies of said notice were posted in ten public places in said water district not less than twenty days from the day so appointed which copies were posted or caused to be posted by said The Central Colorado Power Company; and

It further appearing to the Court and the Court doth find that each and all of said notices as given, published, posted and served were in all things given, published, posted and served within the time and in the manner provided by said order of November 14th 1910, and that all persons and associations and corporations entitled to notice of this proceeding were duly and regularly notified thereof in the manner provided by law and in accordance with the orders of this Court; and the Court having heard the evidence adduced as well as having considered the evidence heretofore taken in the matter and being fully advised in the premises, as to

THE GLENWOOD POWER CANAL AND PIPE LINE,
the Court doth find:

That heretofore and on to-wit: the 4th day of August A.D. 1903, a decree of this Court was duly made and entered of record in a certain proceeding then pending in said Court, entitled: "In the matter of the application for the adjudication of priority of right to the use of water for the DeNemur Canal and Pipe Line and its extension from the Grand River, for power and manufacturing purposes in Water District No. 13", that in said proceeding there was duly adjudicated and decreed to the said canal and pipe line for the use and benefit of the owners thereof, their heirs and assigns for said purposes, 8500 cubic feet of water per second of time of the waters of the Grand River, with priority dating from January 7, 1903, to be diverted into said canal and pipe line through the headgate thereof, conditioned however, that the final completion of said canal and pipe line, and auxiliary works in connection therewith, and the application of the waters aforesaid to said beneficial purposes, should be completed and consummated with all due diligence, and within a reasonable time.

That thereafter, and on to-wit: the 9th day of December A.D. 1907, a decree of this Court was duly made and entered of record in this proceeding, among other things awarding to the Glenwood Power Canal and Pipe Line, for the use and benefit of the owners thereof, 1250 cubic feet of water per second of time with priority No. 2 dating from the 7th

day of January, 1902, for power, mining, milling, manufacturing, lighting, heating and traction purposes, conditioned, however, that the work of construction thereon should be diligently and continuously prosecuted and the waters of said Grand River to be diverted by means of said canal and pipe line, should be applied to the beneficial uses aforesaid within a reasonable time; that part of the waters decreed as aforesaid to The DeRomer Canal and Pipe Line, was and is used at the Glenwood Power Canal and Pipe Line, the headgate of which pipe lines are substantially at the same point, as will more fully appear from said proceedings.

That it was provided in the decree of the Glenwood Power Canal and Pipe Line, that it should not be taken to operate as a denial or dismissal of the rights theretofore adjudicated to The DeRomer Canal and Pipe Line,

That the work of construction upon said canal and pipe lines and each thereof was at all times diligently and continuously prosecuted until the completion thereof; that 1250 ~~553~~ cubic feet of water per second of time has been diverted and used in the County of Garfield and State of Colorado by means of said Glenwood Power Canal and Pipe Line, (formerly a part of the DeRomer Canal and Pipe Line) and applied to the beneficial purposes aforesaid, within the State of Colorado, with all due diligence and within a reasonable time, by reason whereof said claimant is entitled to a final order and decree of this Court, making absolute the decrees of heretofore rendered, the said decree to be for 1250 cubic feet of water per second of time of the waters of the Grand River and its Tributaries to be diverted by means of said Glenwood Power Canal and Pipe Line for power, for mining, milling, and manufacturing, lighting, heating and traction purposes, with priority No. 2 dating from the 7th day of January, 1902, in said Water District No. 53.

That said Glenwood Power Canal and Pipe Line, as constructed and completed is as follows:

The name of said canal and pipe line is the Glenwood Power Canal and Pipe Line.

The name of the owner thereof is the said Central Colorado Power Company, a Colorado corporation.

The Postoffice address of said company is Denver, Colorado.

The headgate of said Glenwood Power Canal and Pipe Line is located at a point on the right bank being the northerly bank of the Grand River in the county of Garfield, State of Colorado, from which stream the said canal and pipe line derives its supply of water, at a point whence the north quarter corner of Section Thirty (30), Township Five (5) South, Range Eighty-seven (87) West 8th P.M. bears north $83^{\circ} 45' 30''$ East 2414.64 feet.

The general course thereof is westerly from said headgate.

That said canal and pipe line consists of a diverting dam located upon the Grand River at the headgate thereof; a gravity line; a pressure pipe line consisting of two pipes running from the gravity line to the power house at the lower end of said pipe line where electrical power is generated by means of water passing through said Glenwood Power Canal and Pipe Line, All in Garfield County, Colorado, and thence transmitted and used by means of transmission and distribution lines and other electrical appliances to various parts of the State.

The length of said gravity line is 12,483 feet and consists of a tunnel with concrete walls and floor 16 feet 8 inches in width and 12 feet high, inside measurement; the grade thereof is five-tenths (5) feet per Thousand (1000) feet.

The length of said pressure line as constructed is 237 feet and the grade thereof is a fall of 165 feet in said Distance; each section of said line as constructed consists of a pipe 108 inches in interior diameter.

The purposes for which the water is used and to be used is for power, mining, milling, manufacturing, lighting, heating and traction purposes.

The carrying capacity of said canal and pipe line is 1300 cubic feet of water per second of continuous flow.

The date of the appropriation of water by original construction of said canal and pipe line is the 7th day of January A.D. 1902 and the amount of water appropriated by and under said construction is 1250 cubic feet of water per second of time.

The work of construction upon said Glenwood Power Canal and Pipe Line was commenced under the name of the DeRemor Canal and Pipe Line on the 6th day of January 1902, by J.R. DeRemor and others, the grantors by

hence conveyances of said claimant The Central Colorado Power Company.

On the 10th day of April A.D. 1902 The Grand River Power and Transmission Company duly located The Grand River Power and Transmission Company's Canal and Pipe Line appropriating 300 cubic feet of water per second of time. The Central Colorado Power Company is grantee and present owner thereof.

The said DeRomer Canal and Pipe Line and the Grand River Power and Transmission Company's pipe line and other projects and the rights of way and water rights for said canals and pipe lines and projects have been acquired and are now owned by said The Colorado Power Company and are now a part of said Glenwood Power Canal and Pipe Line.

The said Glenwood Power Canal and Pipe Line has its headgate substantially at the same point and the line thereof substantially along the line of the said DeRomer Canal and Pipe Line, for which a right of way was granted by the United States to J.R. DeRomer and others under Section 9 of the Act of Congress of July 26, 1866 (U.S.R.S. Section 2339) and the laws, rules and regulations supplementary thereto and passed in furtherance of the purposes of said Act; which right of way was on the 20th day of August, 1903, approved by the Secretary of the Department of the Interior of the United States and was thereafter granted to and acquired by said The Central Colorado Power Company with the approval of the Secretary of the Interior and is now owned by said The Central Colorado Power Company.

The said Glenwood Power Canal and Pipe Line also has its headgate substantially at the same point and the line thereof substantially along the line of said The Grand River Power and Transmission Company's Canal and Pipe Line, for which a right of way was granted by the United States to said company under Section 9 of the Act of Congress of July 26, 1866 (U.S.R.S. Section 2339) and laws, rules and regulations supplementary thereto and passed in furtherance of the purposes of said Act; which right of way was on the 12th day of November, 1903, approved by the Secretary of the Department of the Interior of the United States and was thereafter granted to and acquired by said The Central Colorado Power Company with the approval of the Secretary of the Interior and is now owned by said The Central Colorado Power Company.

The work of construction upon said Glenwood Power Canal and Pipe Line was continuously and diligently prosecuted at a great cost and difficulty and was completed on or about May 24th, 1909, and water diverted through said canal and pipe line and used for beneficial purposes aforesaid and ever since said time the water from the Grand River has been and is now being used by means of said canal and pipe line for such beneficial purposes to the extent of 1250 cubic feet of water per second of time and by reason thereof the decrees concerning said canal and pipe line are hereby ratified confirmed and ~~approved~~ approved to the extent of 1250 cubic feet of water per second of time of the Grand River with priority No. 2 dating from January 7th 1908.

The work necessary for the construction of said canal and pipe line has been of great difficulty and performed at an outlay of great cost and expense and among other things has consisted of expensive surveys and re-surveys for the purposes of determining the most feasible and practical route and location thereof; as well as the building of tunnels and costly engineering construction; that the Grand River at and near the point of diversion thereof is walled in by masses of almost perpendicular solid rock and the route of said canal and pipe line passes through precipitous cliffs and solid walls of granite rock all of which it was necessary to overcome in the construction of said canal and pipe line, and that all of the work thereon was necessary as a part and in furtherance of the completion of said canal and pipe line.

Wherefore, as to the Glenwood Power Canal and Pipe Line it is hereby ORDERED, ADJUDGED AND DECREED, that said Glenwood Power Canal and Pipe Line is entitled to priority No. 2. It is claimed and owned by The Central Colorado Power Company, organized and existing under the laws of the State of Colorado, and is a part of said company's water power system. The water to be diverted by means thereof is used and to be used for power, mining, milling, manufacturing, lighting, heating and traction purposes to the extent of 1250 cubic feet of water per second of time, continuous flow through said canal and pipe line for said purposes, to be taken from the Grand River through said canal and pipe line from its headgate located on the right bank, being the northerly bank, of the Grand River, from which it derives its supply of water, at a point whence the north Quarter Corner

CRD-01
Civil Action No. 466
Senior Shoshone Water Right Decree
[CWCB ISF HEARING]

of Section 30, Township 5 South, Range 97 West, 5th P. M. bears north 33° 45' 20" East 2414.64 feet, running thence in a generally westerly direction from said headgate and the decrees heretofore entered concerning said Glenwood Power Canal and Pipe Line are hereby ratified, confirmed and approved to the extent of 1250 cubic feet of water per second of time of the Grand River with priority No. 2 dating from January 7, 1902. And it is hereby,

FURTHER ORDERED, ADJUDGED AND DECREED, that there be allowed to flow into said canal and pipe line from said Grand River for the beneficial uses and purposes aforesaid and for the use and benefit of the party or parties lawfully entitled thereto and under by virtue of the appropriation by original construction at any and all times, during any and all season 1250 cubic feet of water per second of time, the appropriation of which water took effect on and said priority No. 2 dates from the 7, of January 1902.

Provided However, that after the waters of the Grand River shall have been used for the beneficial purposes aforesaid by means of said canal and pipe line, the said waters shall be returned to the stream not less than two miles above the Town of Glenwood Springs, in Garfield County, Colorado.

IT IS FURTHER ORDERED by the Court that each and every person interested in or claiming any ditch, canal or reservoir in this proceeding whether as to the decrees heretofore rendered or as to this supplementary decree shall receive from the Clerk of this Court, on the payment of the sum of \$3.50 for each certificate and a further sum of 20¢ per folio for the matters contained therein a certificate under the Seal of the Court showing the date or dates and the amount or amounts of the appropriation adjudged in favor of such ditch, canal, flume, pipe line or reservoir under and by virtue of the construction, extension and enlargements thereof severally; also specifying the number of said ditch, canal, flume or pipe line and of each priority to which the same may be entitled by reason of such construction, extension and enlargement, if any.

Done in open Court at Red Cliff, Eagle County, Colorado, this 27th day of February A. D. 1911.

By the Court,

Chas. Savender,

Judge.

Decree awarded Dec 14, 1956

SHOSHONE HYDRO PLANT DIVERSION - NO. 2

That under former decrees of the Court said ditch was numbered 2 and awarded a priority for 1,250.0 cubic feet of water per second of time under and by virtue of the original construction; that said ditch under this decree is entitled to Priority No. 328 for 158.0 cubic feet of water per second of time under and by virtue of the first enlargement; that the date of initiation of said appropriation was the 15th day of May, 1929; that the name and post office address of the claimant is Public Service Company of Colorado, a Colorado corporation, 900 15th Street, Denver, Colorado; that said diversion system is used in the manufacturing and generation of electrical energy and the source of supply is the Colorado River;

That the method of diversion consists of a diversion dam, tunnel and penstocks utilized by said claimant for the generation of electricity and the diversion dam is located on the Colorado River in Garfield County, State of Colorado, in Section 30 of Township 5 South, Range 87 West of the 6th Principal Meridian. The adit or headgate of the tunnel (formerly DeRamer Canal and Pipeline) is located on the right bank, being the northerly bank, of the Colorado River in the County of Garfield, State of Colorado, whence the North quarter corner of Section Thirty (30), Township Five (5) South, Range Eighty-seven (87) West of the 6th Principal Meridian bears North 23°48'20" East 2,414.64 feet, more or less;

That there be allowed to flow into said ditch and diversion system from said Colorado River for the use aforesaid and for the benefit of the party entitled thereto under and by virtue of the first enlargement, Priority No. 328 for 158.0 cubic feet of water per second of time relating back to and dating from the 15th day of May, 1929;

That said Priority No. 328 hereby awarded, to the extent of 158.0 cubic feet of water per second of time, is hereby made absolute and unconditional.

*1,250.0
158.0
Total - 1,408.0 Cfs, Ft.*

DRAFT
SHOSHONE WATER RIGHTS DEDICATION AND ISF AGREEMENT

(Shoshone Water Rights)

This WATER RIGHT DEDICATION and ISF AGREEMENT (“Agreement”), is made as of this ____ day of _____, 2025, by and between the Colorado Water Conservation Board (“CWCB”), an agency of the State of Colorado, the Colorado River Water Conservation District (“River District”), a political subdivision of the State of Colorado, and Public Service Company of Colorado, a Colorado corporation (“PSCo”). The CWCB, the River District, and PSCo may be hereinafter referred to individually as a “party,” and together as the “parties.”

RECITALS

- A. The CWCB is an agency of the State of Colorado created to aid in the protection and development of the waters of the state for the benefit of its present and future inhabitants. In 1973, the General Assembly vested the CWCB with the exclusive authority to appropriate waters of the natural stream for minimum stream flows between specific points on a stream to preserve the natural environment to a reasonable degree.
- B. Pursuant to section 37-92-102(3), C.R.S., the General Assembly has also vested the CWCB with the ability to acquire, by grant, purchase, donation, lease, or other contractual agreement, such water, water rights, and interests in water that are not on the division engineer’s abandonment list in such amount as the CWCB determines is appropriate for stream flows to preserve and/or improve the natural environment to a reasonable degree.
- C. The River District was created by the provisions of sections 37-46-101, C.R.S., *et seq.*, to promote the health and general welfare of the State of Colorado by the conservation, use, and development of the water resources of the Colorado River and its principal tributaries. The River District constituents include West Slope governmental entities and water interests that desire to maintain in perpetuity the flow regime within Water Division 5 created by the historical exercise of the water rights that are the subject of this Agreement.
- D. PSCo is a Colorado corporation and is the owner and operator of the hydroelectric power plant (the “Shoshone Power Plant”) located on the mainstem of the Colorado River in Glenwood Canyon, approximately six miles upstream of Glenwood Springs, Colorado. The Shoshone Power Plant produces hydroelectric energy by means of PSCo’s diversion of the following water rights:
 - (i) The Glenwood Power Canal and Pipeline water right, decreed on December 9, 1907, in Civil Action No. 466, Eagle County District Court, in the amount of 1,250 cubic feet per second of time (“c.f.s.”) with an appropriation date

of January 7, 1902, for power, mining, milling, manufacturing, lighting and heating and traction purposes, and as decreed absolute by the Eagle County District Court on February 27, 1911, in Civil Action No. 553 (the “Senior Shoshone Water Right”); and

- (ii) The Shoshone Hydro Plant Diversion No. 2 water right, decreed absolute on February 7, 1956, in Civil Action No. 1123, Eagle County District Court, in the amount of 158 c.f.s. with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy (the “Junior Shoshone Water Right”).

Together, these two water rights are referred-to as the “Shoshone Water Rights”.

- E. The Senior Shoshone Water Right is one of the most senior water rights on the Colorado River. During significant periods of the year, there is not sufficient water to satisfy all water rights decreed on the Colorado River and its tributaries within the State of Colorado. At such times, when the measurable Natural Flow of the Colorado River drops below 1,408 c.f.s. (the sum of 1,250 c.f.s. attributable to the Senior Shoshone Water Right and 158 c.f.s. attributable to the Junior Shoshone Water Right) at the streamflow gauge (USGS 09070500) located on the Colorado River near Dotsero, Colorado (“Dotsero Gauge”), the Colorado Division of Water Resources (“DWR”) administers a call for the Shoshone Water Rights which results in the curtailment of junior water rights upstream of the Shoshone Power Plant. The Dotsero Gauge is the location where the administration and measurement of the Shoshone Water Rights has historically occurred. The “Natural Flow” is the amount of water in the Colorado River measured at the Dotsero Gauge, including the amount of water usable by the Shoshone Water Rights when those water rights are in priority, except that the “Natural Flow” does not include any water released from storage and conducted into the Colorado River upstream of the Dotsero Gauge (accounting for evaporation and transit loss), which water is intended for delivery for use downstream of the discharge outlets for the Shoshone Power Plant.
- F. The Shoshone Water Rights are decreed for non-consumptive hydropower generation use at the Shoshone Power Plant. All of the water diverted by PSCo for hydropower generation use is returned to the Colorado River after such water is conveyed through the Shoshone Power Plant’s penstocks and turbines, to a point of return at the plant’s discharge outlets that is approximately 2.4 miles downstream of the point of diversion at the Shoshone Diversion Dam and Tunnel, as depicted on the map attached as **Exhibit A**. The approximate locations of the “Shoshone Diversion Dam and Tunnel” and the outfall for the “Shoshone Power Plant Discharge Outlets” are as follows:
 - i. **Shoshone Power Plant Diversion Dam and Tunnel:** on the right bank, being the northerly bank, of the Colorado River whence the North quarter corner of Section Thirty (30), Township Five (5) South, Range Eighty-Seven (87) West of the 6th Principal Meridian bears North 23° 48’20” East 2,414.64 feet, in Garfield County, Colorado.

- ii. **Shoshone Power Plant Discharge Outlets:** on the right bank, being the northerly bank, of the Colorado River whence the Southeast corner of Section Thirty-five (35), Township Five (5) South, Range Eighty-Eight (88) West of the 6th Principal Meridian bears South 29° 24' 14" East, 1,771 feet, in Garfield County, Colorado.¹

The reach of stream between the Shoshone Power Diversion Dam and Tunnel and the Shoshone Power Plant Discharge Outlets is referred to herein as the “Shoshone Reach.” Through this Agreement, the parties seek to preserve and improve the natural environment of the Colorado River within the Shoshone Reach to a reasonable degree.

- G. Pursuant to the Purchase and Sale Agreement between the River District and PSCo, with an effective date of January 1, 2024 (the “PSA”), the River District is the contract purchaser of the Shoshone Water Rights. The PSA provides that PSCo, and its successors and assigns, is entitled to a perpetual leasehold interest in the Shoshone Water Rights for continued use of the Shoshone Water Rights for hydropower generation at the Shoshone Power Plant (the “Lease,” the form of which is attached to the PSA as “Exhibit D”). The PSA (including all its Exhibits and Attachments) is attached and incorporated hereto as **Exhibit B**.
- H. PSCo’s historical exercise of the Shoshone Water Rights has resulted in a streamflow regime that has benefitted the natural environment of the Colorado River basin both upstream and downstream of the Shoshone Power Plant. In addition, the historical exercise of the Shoshone Water Rights has provided benefits to water users throughout the Colorado River basin by providing a relatively predictable water rights administration regime both upstream and downstream of the Shoshone Power Plant.
- I. The parties wish to continue the general historical call operations and maintain the flow regime of the Colorado River, both upstream and downstream of the Shoshone Power Plant. In furtherance of that effort, and subject to the terms of this Agreement, the River District wishes to dedicate to the CWCB, at no additional cost to the CWCB, the exclusive right to use the Shoshone Water Rights for instream flow purposes within the proposed Shoshone Reach to the extent the water rights are not being used for hydropower generation purposes at the Shoshone Power Plant, subject to the requirements of this Agreement. To that end, and subject to the terms set forth herein, the River District, PSCo, and the CWCB agree to jointly file an application to adjudicate a change of the Shoshone Water Rights in Garfield County District Court, Water Division No. 5, (the “Water Court”) to add instream flow use to preserve and improve the natural environment of the Shoshone Reach of the Colorado River to a reasonable degree as an additional beneficial use of the Shoshone Water Rights. Use of the Shoshone Water Rights for instream flow and hydropower purposes shall be subject to any terms and conditions imposed by the change of water right decree to be entered by the Water Court, further described in Paragraphs XX and XX below (the “Decree”).

¹ The legal description set forth above for the Downstream Terminus (Shoshone Power Plant Discharge Outlets) is an approximate location developed by River District staff and may be supplemented or modified at the time a water court application is filed in Water Division No. 5.

- J. At two regularly scheduled public meetings of the CWCB held on [date], and [date], the CWCB considered the River District's proposed dedication of the exclusive right to use the Shoshone Water Rights for instream flow purposes to the CWCB in accordance with section 37-92-102(3), C.R.S., and the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program ("ISF Rule(s)"), 2 CCR 408-2. At its regularly scheduled meeting on [date], the CWCB determined that it is appropriate to enter this Agreement and that the best use of the acquired interest in the Shoshone Water Rights is use up to the full decreed amount of 1,408 c.f.s., for instream flow use to preserve and improve the natural environment to a reasonable degree within the Shoshone Reach. Such use of the Shoshone Water Rights for instream flow purposes can occur within the Shoshone Reach to the extent the Shoshone Water Rights are not being exercised for hydropower generation purposes at the Shoshone Power Plant, up to the full amount of 1,408 c.f.s. of Natural Flow (hereinafter, the "ISF Rate"), subject to the limitations described in Paragraphs 7 and 9 below.
- K. The CWCB, the River District, and PSCo wish to cooperate to implement such legal mechanisms and to obtain such court decree and approvals as are necessary to change the Shoshone Water Rights to include instream flow use for the purpose of preserving and improving the natural environment within the Shoshone Reach, and to protect the Natural Flow ISF Rate through the Shoshone Reach to the extent it is not being exercised for hydropower generation purposes at the Shoshone Power Plant.

AGREEMENT

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

DEDICATION

1. The Recitals to this Agreement are incorporated by this reference and shall constitute part of this Agreement.
2. The River District hereby dedicates to the CWCB, effective as of the date of closing of the PSA, at no additional cost to the CWCB, the exclusive right to use the Shoshone Water Rights for instream flow use within the Shoshone Reach, to the extent such water rights are not being used for hydropower generation purposes at the Shoshone Power Plant pursuant to the Lease, and subject to the requirements of Paragraph 9 below. The River District shall retain title to the Shoshone Water Rights.
3. This Agreement acknowledges the CWCB's consideration of the Colorado Parks and Wildlife analysis showing a biological need to preserve and improve the natural environment of the Shoshone Reach of the Colorado River to a reasonable degree.
4. The parties intend that the Decree, as further described in Paragraphs XX and XX below, shall confirm that the water attributable to the Shoshone Water Rights up to the available ISF Rate will remain in the stream to preserve and improve the environment to a reasonable

degree within the Shoshone Reach where the CWCB does not presently have a decreed instream flow right, to the extent the Shoshone Water Rights are not being used for hydropower generation purposes.

5. The parties intend that the Decree shall confirm that the Shoshone Water Rights shall be administered by the State Engineer and the Division Engineer for Water Division No. 5 (“Engineers”) based on the Natural Flow at the Dotsero Gage. Instream flow use of the Shoshone Water Rights will be administered through the Shoshone Reach where the intended instream flow use will occur with the goal of utilizing the Shoshone Water Rights up to the available ISF Rate without diversion or exchange by intervening water users. The parties intend that the Decree shall also contain an affirmative finding which confirms that the change of the Shoshone Water Rights for the additional instream flow use is administrable by the Engineers and is capable of meeting all applicable statutory requirements.
6. In the event any new infrastructure or stream gaging stations are either necessary or desirable for the implementation of this Agreement, or in the event that any new infrastructure—including measuring devices—are deemed necessary by the Engineers with respect to the Shoshone Water Rights, the parties agree to work cooperatively with each other in good faith to accommodate the installation of any such infrastructure or gaging stations, which are necessary to make water available for use under this Agreement, in an efficient and economical manner.

CONDITIONS ON THE ADMINISTRATION AND EXERCISE OF
THE SHOSHONE WATER RIGHTS FOR INSTREAM FLOW USE

7. It is the intent of the parties that the Shoshone Water Rights will be protected for instream flow use to the maximum extent possible as allowed under the Water Court Decree, to the extent the Shoshone Water Rights are not being used for power generation. To implement this mutual intent, the CWCB agrees that it will request administration of the Shoshone Water Rights for instream flow use in the Shoshone Reach of the Colorado River to preserve and improve the natural environment to a reasonable degree at all times when the Natural Flow of the Colorado River as measured at the Dotsero Gage is less than 1,408 c.f.s., subject only to the limitations set forth below:
 - a. Any terms, conditions, and limits set forth in the Decree;
 - b. Any reduction in instream flow use made pursuant to the terms and conditions of Paragraph 9, below, due to use or planned use of the Shoshone Water Right for power generation; and
 - c. During 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.

8. Pursuant to ISF Rule 10, 2 CCR 408-2, the parties shall cooperate in the administration and monitoring of the instream flow use of the Shoshone Water Rights dedicated to the CWCB under this Agreement so that, subject to the terms of this Agreement and the Decree, 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. PSCo, the CWCB and the River District shall coordinate with DWR to monitor the flow and calculate the Natural Flow of the Colorado River at the Dotsero Gage as the point of administration for the Shoshone Water Rights for hydropower generation and instream flow use.
9. The CWCB and the River District shall notify PSCo of any request for administration required by the provisions of this Agreement. PSCo shall provide advance written notice to the River District and the CWCB at least thirty (30) days prior to any scheduled operations or maintenance activities that result in a full or partial shutdown of the Shoshone Power Plant, and shall provide notice as soon as reasonably possible of any unscheduled shutdown or reduction of Shoshone Power Plant operations. During the term of the Lease, the parties will coordinate on at least an annual basis to determine how the Shoshone Water Rights will be allocated between hydropower generation and instream flow use in a manner consistent with the terms and conditions of the Decree that (1) maximizes PSCo's ability to exercise the Shoshone Water Rights for hydropower generation purposes; and (2) maximizes the ability to use the Shoshone Water Rights for instream flow purposes to the extent the water rights are not being used for hydropower generation purposes at the Shoshone Power Plant, in a manner that does not reduce the availability of the Shoshone Water Rights for subsequent hydropower use. Upon termination of the Lease, this paragraph, and any other restrictions on the Shoshone Water Rights throughout this Agreement due to hydropower use, shall no longer be in effect, and, subsequent to any permanent decommissioning of the Shoshone Power Plant, instream flow shall be the only use of the Shoshone Water Rights.
10. Each party to this Agreement shall also immediately report, in writing, to the other parties the nature of any communications with the Engineers concerning the administration of the Shoshone Water Rights as contemplated by this Agreement. Following the closing of the PSA, the parties shall identify those persons and provide such contact information (including email and telephone number) to the other parties necessary to effectuate the purposes hereof.
11. Any rights created by this Agreement are contractual rights. Use by the CWCB for instream flow purposes in accordance with this Agreement does not provide the CWCB an ownership right in the Shoshone Water Rights or in any of the River District or PSCo's facilities or water rights as they exist now or may exist in the future.
12. The CWCB's contractual rights to and interest in the Shoshone Water Rights dedicated to the CWCB for use in the Shoshone Reach under this Agreement extends to and terminates at the downstream termination point of the Shoshone Reach, which is the stream accrual point for the current Shoshone Power Plant Discharge Outlets.

NO CREATION OF RIGHT OF SUCCESSIVE USE OF THE SHOSHONE
WATER RIGHTS DOWNSTREAM OF THE SHOSHONE REACH

13. This Agreement does not recognize any use or create any right of use by the River District of the Shoshone Water Rights downstream of the Shoshone Reach. Notwithstanding the foregoing, this Paragraph 13 does not prevent any use by the River District or its constituents of the natural stream flow downstream of the Shoshone Reach within the priority system and in accordance with Colorado law and the Decree.

WATER COURT PROCEEDINGS

14. The parties shall file and diligently pursue a Water Court application and any necessary appeals to obtain the Decree in a final, unappealable form confirming a change of water right for the Shoshone Water Rights to include the additional use for instream flow purposes by the CWCB and confirming that the water attributable to the Shoshone Water Rights will be used for instream flow to preserve and improve the natural environment in the Shoshone Reach of the Colorado River to a reasonable degree up to the full amount of the ISF Rate , subject to the terms and conditions of the Decree and this Agreement. In such water court application, the CWCB, the River District, and PSCo shall be co-applicants for the purpose of advancing and protecting their contractual rights under this Agreement, including adjudicating a decreed right to use of the Shoshone Water Rights by the CWCB to preserve and improve the natural environment to a reasonable degree within the Shoshone Reach. Except as otherwise provided in the PSA, to which the CWCB is not subject, each party shall bear its own attorney fees and costs related to its participation in any water court adjudication contemplated under this Paragraph 14. Except for its own attorney fees and court filing fees, the CWCB is not responsible for paying costs of prosecuting the water court application, including the costs of hiring a consulting engineer or other witnesses in furtherance of such application, or attorney fees of any other party incurred in relation thereto.
15. The parties intend that the Decree shall confirm that to the extent the water dedicated under this Agreement is not being used for hydropower generation at the Shoshone Power Plant, such water shall be beneficially used by the CWCB for instream flow purposes to preserve and improve the natural environment of the Colorado River within the Shoshone Reach to a reasonable degree, subject to the terms and conditions of the Decree and this Agreement.
16. The parties agree that the Decree shall not confirm any new appropriation of water. Nor shall any claim be included in the Water Court application except as expressly described in this Agreement. The parties further agree that, upon the successful prosecution of the Water Court application described in Paragraph 14, above, and upon the issuance of the Decree by the Water Court, no further claim for approval of any change of water right with respect to the Shoshone Water Rights shall be sought by any of the parties to this Agreement in the future without first obtaining the prior written consent of all the parties hereto. The River District agrees it will not transfer or otherwise encumber the rights to any other person or entity without the express written consent of the CWCB, with the exception of the right to enter into a promissory note and deed of trust to the benefit of

PSCo as provided by paragraph 3.1.d.2 of the PSA. The parties agree to request that the Water Court include an express statement in the Decree setting forth the limitations described in this Paragraph 16, to wit:

- a. the decree does not confirm any new appropriation or change except to add instream flow;
- b. no further claim for approval of any change of the Shoshone Water Rights will be sought by any of the applicants without written consent of the other applicants hereto; and
- c. the River District will not transfer or otherwise encumber the Shoshone Water Rights to any other person or entity without the express written consent of the CWCB.

RECORDS AND ACCOUNTING

17. The River District shall be responsible for maintaining all records and accounting necessary for the implementation of this Agreement, using forms mutually agreeable to the parties, and all records required by the Engineers for the administration of the changed Shoshone Water Rights.
18. The River District will provide accounting related to the operation of this Agreement to the CWCB and PSCo.

MISCELLANEOUS PROVISIONS

19. The term of this Agreement is perpetual unless terminated in accordance with the terms of this Agreement.
20. This Agreement will automatically terminate and be of no further effect in the event that (i) the sale of the Shoshone Water Rights from PSCo to the River District does not close or occur, or (ii) the PSA is terminated or otherwise expires. Except as otherwise provided in the immediately preceding sentence in this Paragraph 20, this Agreement may be amended or terminated by the written agreement of the parties, and any such termination or amendment shall take effect only when signed by all of the parties to this Agreement or their successors in interest.
21. Neither the CWCB nor PSCo is responsible for construction or modification of any structures that may be necessary for use of the Shoshone Water Rights for instream flow purposes.
22. This Agreement shall not be assignable by any party without the written consent of all the parties hereto. Notwithstanding the foregoing, an assignment by PSCo of this Agreement to any successor or assign of its rights under the Lease is approved by the CWCB and River District without separate written consent, however thirty (30) days advanced written notice of the assignment to the River District and the CWCB is required, and PSCo may assign the Lease only to a successive owner or operator of the Shoshone Power Plant for power generation purposes. Notice and contact information shall be provided to all parties concurrent with any assignment. In the event of the termination of the Lease by PSCo or

its successors or assigns pursuant to Paragraph 26, below, the River District and CWCB will not be required to obtain the written consent of PSCo or its successors or assigns to assign this Agreement.

23. Pursuant to section 37-92-102(3), C.R.S., this Agreement shall be enforceable by each of the parties hereto as a water matter according to the terms and conditions of this Agreement. The parties further agree that the exclusive venue for and jurisdiction of any dispute pertaining to the interpretation or enforcement of this Agreement shall be the Water Court (as defined herein); *provided, however*, that before commencing any action for enforcement of this Agreement, the party alleging the violation shall notify the other parties in writing of the alleged violation and the parties shall make a good faith effort to resolve their differences through informal consultation.
24. The parties hereto acknowledge and agree that specific performance of this Agreement shall be the exclusive remedy for failure of any party to comply with any provision of this Agreement. The parties hereby waive any right to seek or collect damages for any breach or violation of this Agreement.
25. Enforcement of this Agreement and all rights and obligations hereunder are reserved solely to the CWCB, the River District, and PSCo, and not to any third party. Any services or benefits which third parties may receive or provide as a result of this Agreement are incidental to the Agreement and do not create any rights for such third parties.
26. The parties anticipate that at some point in the future, PSCo may permanently decommission the Shoshone Power Plant, and the Lease will terminate. In the event that the Lease terminates, then PSCo shall provide written notice to the parties of the termination of the Lease and PSCo's rights and obligations under this Agreement will also be deemed to be terminated; however, all rights and responsibilities between the CWCB and the River District will remain in effect. Upon termination of the Lease, all restrictions on the Shoshone Water Rights throughout this Agreement due to hydropower use shall no longer be in effect, and, subsequent to any permanent decommissioning of the Shoshone Power Plant, instream flow shall be the only use of the Shoshone Water Rights.
27. The provisions of §§37-92-102(3) and 305(3)(b), C.R.S. that require that all contracts or agreements for interests in water, and the water court decree implementing the contracts or agreements, to state the board or the lessor, lender, or donor may bring about beneficial use of the historical consumptive use of the leased, loaned, or donated water right downstream of the instream flow reach as fully consumable water are not relevant and do not apply to this acquisition.
28. In the event the Decree and this Agreement are inconsistent, the Decree shall control.
29. This Agreement shall be construed in accordance with the laws of the State of Colorado and shall be interpreted broadly to give effect to its purposes.

30. Any failure or delay by a party in exercising any of its rights, power, and remedies hereunder or in accordance with laws shall not lead to a waiver of such rights, and the waiver of any single or partial exercise of a party's rights shall not preclude such party from exercising such rights in any other way and exercising the remaining part of the party's rights.
31. Any notice, consent, waiver, request or other communication required or provided to be given under this Agreement shall be in writing and shall be sufficiently given and shall be deemed delivered when: (a) delivered personally; (b) transmitted by email to the then-designated address of the party, provided that a delivery receipt sent by the recipient is received by the sender, provided if the delivery receipt is sent on a non-business day, or after 5:00 p.m. local time at the physical address of the recipient, then the notice will be deemed received on the next business day; (c) two (2) business days after deposit with the United States Postal Service by certified or registered mail, return receipt requested, postage prepaid; or (d) one (1) business day following deposit with a nationally recognized overnight delivery service, in any event, addressed to the applicable party as set forth below, or at such address as either party may from time-to-time specify in writing to the other:

If to the CWCB: Section Chief
Colorado Water Conservation Board
Stream and Lake Protection Section
1313 Sherman Street, Room 721
Denver, CO 80203
DNR_CWCBISF@state.co.us

and

Jen Mele
First Assistant Attorney General
Natural Resources and Environment Section
1300 Broadway, 7th Floor
Denver, CO 80203
jen.mele@coag.gov

If to PSCo: Public Service Company of Colorado
Attn: Environmental Services
1800 Larimer Street, Suite 1300
Denver, CO 80202

and

Public Service Company of Colorado
Attn: Legal Dept. – Real Estate
1800 Larimer Street, Suite 1400
Denver, CO 80202

(303) 294-2222

Frances.A.Folin@xcelenergy.com

and

Welborn Sullivan Meck & Tooley, P.C.

Carolyn F. Burr, Esq.

James M. Noble, Esq.

1401 Lawrence Street, Suite 1800

Denver, CO 80202

(303) 830-2500

cburr@wsmtlaw.com

jnoble@wsmtlaw.com

If to the River
District:

Colorado River Water Conservation District

General Manager

Andrew Mueller

201 Centennial St., Suite 200

Glenwood Springs, CO 81601

edinfo@crwcd.org

and

General Counsel,

Peter Fleming, Esq.

201 Centennial St., Suite 200

Glenwood Springs, CO 81601

(970) 945-8522

pfleming@crwcd.org

32. Each provision contained herein shall be severable and independent from each of the other provisions such that if at any time any one or more provisions herein are found to be invalid, illegal, or unenforceable, the validity, legality, or enforceability of the remaining provisions herein shall not be affected as a result thereof.
33. The effective date of this Agreement shall be the last date shown on the signature page or pages of this Agreement, provided however that parties' rights and obligations under this Agreement with specific regard to the exercise of the Shoshone Water Rights for instream flow purposes shall not commence until the closing date of the PSA. If the PSA is terminated according to its terms, then this Agreement shall also automatically terminate. This Agreement may be executed in two or more counterparts, each of which when so executed shall be deemed to be an original and all of which when taken together shall constitute one and the same instrument. The counterparts of this Agreement may be executed and delivered by electronic means (including portable document format) by either of the parties and the receiving party may rely on the receipt of such document so executed and delivered electronically as if the original had been received.

[remainder of page intentionally blank]

[signature page(s) follow]

IN WITNESS WHEREOF, the CWCB, the River District, and PSCo have executed this Agreement as of the last date of execution.

COLORADO WATER CONSERVATION BOARD

By: _____
Lauren Ris, Director

Date: _____

[signatures continue on next page]

[signature page to Water Right Dedication Agreement (Shoshone Water Rights)]

**COLORADO RIVER WATER CONSERVATION
DISTRICT**

ATTEST:

By: _____
Andy Mueller, General Manager

BY: _____

Date: _____

[signatures continue on next page]

[signature page to Water Right Dedication Agreement (Shoshone Water Rights)]

PUBLIC SERVICE COMPANY OF COLORADO

By: _____
Robert Kenney, President

Date: _____

[signature page to Water Right Dedication Agreement (Shoshone Water Rights)]

Exhibit A
(Shoshone Diversion Dam and Tunnel)

Exhibit B
(Purchase and Sale Agreement)

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT (this “**Agreement**”) is made as of the **Effective Date** by and between Colorado River Water Conservation District, a political subdivision of the state of Colorado (the “**River District**”) and Public Service Company of Colorado, a Colorado corporation (“**PSCo**”). PSCo and the River District may be hereinafter referred to individually as a “**Party**,” and together as the “**Parties**.” All capitalized terms used but not immediately thereafter defined shall have the meanings ascribed thereto elsewhere in this Agreement.

RECITALS

- A. PSCo owns the Shoshone Water Rights (defined below in Article 2), which are diverted at the Shoshone Dam, located in Glenwood Canyon, Colorado, and used for non-consumptive hydro-power generation at the Shoshone Hydroelectric Generation Station (“**Power Plant**”). Water delivered to the Power Plant is discharged and returned directly into the Colorado River at the outfall of the Power Plant.
- B. Operation of the Shoshone Water Rights for hydropower purposes for over 100 years has had the added benefits of maintaining administrative stability of water rights in the Colorado River basin, , helping Colorado to meet the recovery requirements of endangered fish species under the federal Endangered Species Act, contributing significant flows to the interstate Colorado River System, and providing stream flows necessary to meet municipal, agricultural, environmental and recreation needs on Colorado’s western slope.
- C. The River District represents western slope interests that desire to maintain in perpetuity the operation of the Shoshone Water Rights in a manner consistent with their historical operation in order to preserve the benefits described above.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

ARTICLE 1. BASIC TERMS

- 1.1 Effective Date: January 1, 2024
- 1.2 Seller: PUBLIC SERVICE COMPANY OF COLORADO, a Colorado Corporation
- 1.3 Buyer: COLORADO RIVER WATER CONSERVATION DISTRICT, a political subdivision of the state of Colorado
- 1.4 Subject Property: The Shoshone Water Rights, as more particularly described in Article 2, below.
- 1.5 Purchase Price: NINETY-EIGHT MILLION FIVE HUNDRED THOUSAND DOLLARS (\$98,500,00.000).

- 1.6 Transaction Costs:** Five Hundred Thousand Dollars (\$500,000.00), as more particularly defined in Article 3, below.
- 1.7 Due Diligence Period:** The period beginning on the Effective Date and ending on May 15, 2024.
- 1.8 Closing Date:** Thirty (30) days following the satisfaction of the Closing Conditions.
- 1.9 Exhibits:**
- | | |
|------------|---------------------------------|
| Exhibit A: | Escrow Agreement |
| Exhibit B: | PSCo's Due Diligence Deliveries |
| Exhibit C: | Special Warranty Deed |
| Exhibit D: | Lease of Shoshone Water Rights |
| Exhibit E: | Promissory Note |
| Exhibit F: | Deed of Trust |

ARTICLE 2. PROPERTY DEFINED

2.1 Shoshone Water Rights. As used in this Agreement, the property being conveyed is the following described water rights:

(a) The Shoshone Power Plant senior water right decreed as the Glenwood Power Canal and Pipeline water right on Dec. 9, 1907, in Civil Action No. 0466, Eagle County District Court, in the amount of 1,250 cfs with an appropriation date of Jan. 7, 1902, for power, mining, milling, manufacturing, lighting and heating and traction purposes, and as further decreed by the Eagle County District Court on Feb. 27, 1911, in Civil Action No. 553; and

(b) The Shoshone Power Plant junior water right decreed as the Shoshone Hydro Plant Diversion No. 2 on Feb. 7, 1956 in Civil Action No. 1123, Eagle County District Court, in the amount of 158 cfs with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy.

together, (the "**Shoshone Water Rights**").

ARTICLE 3. PURCHASE & SALE

3.1 Agreement of Purchase and Sale. Subject to the terms and conditions of this Agreement, PSCo agrees to convey to River District, and River District agrees to purchase from PSCo the Shoshone Water Rights for the Purchase Price. The River District's payment of the Purchase Price to PSCo shall be as follows:

(a) Deposit. Not later than ten (10) business days following the Effective Date, River District shall deliver FIVE HUNDRED THOUSAND and 00/100 DOLLARS (\$500,000.00), by wire transfer or bank or cashier's check, at its election (the "**Initial Deposit**") to the escrow holder defined below (the "**Escrow Holder**"). The Initial Deposit shall be deposited with and held by Escrow Holder as a deposit against the Purchase Price in accordance with the terms and provisions of this Agreement, and shall be credited against the Purchase Price if the transaction closes. All interest accruing on the Initial Deposit shall accrue to PSCo and be applied

against the Purchase Price at Closing. In the event this Agreement is terminated pursuant to the terms of this Agreement, the Escrow Holder shall distribute the Initial Deposit and interest accrued thereon in a manner consistent with Section 4.5, below.

(b) Escrow Holder. The Escrow Holder shall be First American Title Insurance Company, 1380 17th Street, Denver, CO 80202, Attn: Nichole Segura, Vice President, Commercial Escrow Officer. Upon execution of this Agreement, the Parties shall execute an escrow agreement as reasonably requested by the Escrow Holder, subject to PSCo's and River District's review and approval, not to be unreasonably withheld (the "**Escrow Agreement**"), substantially in the form of Exhibit A attached hereto. Escrow Holder shall hold and dispose of the Deposit in accordance with the terms of this Agreement and the Escrow Agreement.

(c) Transaction Costs. In addition to the Purchase Price, the River District shall pay PSCo FIVE HUNDRED THOUSAND and 00/100 DOLLARS (\$500,000.00) (the "**Transaction Cost Prepayment**") as prepayment for PSCo's legal and consulting fees and costs incurred in negotiating this Agreement, negotiating associated agreements with the River District, Colorado Water Conservation Board and Denver Water; participating in filing and prosecuting a change application in Water Court, and participation in other negotiations, agency or regulatory approval processes, including the Colorado Public Utilities Commission, or other actions related to this transaction ("**Transaction Costs**"). The River District shall pay the Transaction Cost Prepayment no later than ten (10) days following the Effective Date by delivering the same directly to PSCo by wire transfer pursuant to instructions provided by PSCo. The Transaction Cost Prepayment to PSCo shall not be refundable in any amount to River District, except upon early termination of this Agreement and shall not be applied or credited against the Purchase Price at Closing. If the total Transaction Costs exceed the Transaction Cost Prepayment, the River District shall pay the difference at Closing (the "**Final Transaction Costs**"). Prior to Closing, at least every sixty (60) days, PSCo shall provide an up-to-date accounting of the Transaction Costs incurred by PSCo which will identify the billing entity, the total billed by such entity, and a brief description of the work performed. Before any funds may be transferred to PSCo as contemplated by this paragraph, PSCo must provide a signed W-9 to the River District, be set up as a vendor in the River District's billing/accounting system, provide its wiring instructions to the River District, and participate in a wire confirmation call with the River District.

(d) Closing Payment.

1. On the day of the Closing, SEVENTY-EIGHT MILLION FIVE HUNDRED THOUSAND and 00/100 DOLLARS (\$78,500,000.00) of the Purchase Price, as adjusted by the Initial Deposit, and any interest accrued thereon, shall be paid in cash to PSCo by wire transfer (the "**Closing Payment**"). Notwithstanding the foregoing, the River District may, in its sole option and discretion, choose to pay more than the Closing Payment at Closing.

2. The balance of the Purchase Price, if any, after payment of the Closing Payment, and any other amounts tendered by the River District at Closing pursuant to Section 3.1(d)1, above, shall be paid to PSCo over ten (10) years in equal annual installment due on or before April 30 each year, as set forth in the promissory note (the "**Promissory Note**") attached hereto as Exhibit E and

incorporated herein by reference. The Promissory Note and Deed of Trust attached assumes the remaining balance will be TWENTY MILLION and 00/100 DOLLARS (\$20,000,000.00) and the Parties agree to adjust the principal sum stated on the Promissory Note and Deed of Trust to reflect the actual balance of the Purchase Price prior to its execution. If the River District tenders the entire Purchase Price at Closing, the Promissory Note and Deed of Trust will not be required to close the transaction contemplated by this Agreement.

ARTICLE 4. DUE DILIGENCE AND CONDITIONS PRECEDENT TO CLOSING

4.1 PSCo's Due Diligence Deliveries. PSCo shall deliver or make available to River District, within fourteen (14) business days after the Effective Date, complete, legible copies of the items described in Exhibit B attached to this Agreement to the extent such items are in the possession or control of PSCo (collectively, "**PSCo's Due Diligence Deliveries**"). The Due Diligence Deliveries shall be considered to be Common Interest Information pursuant to the Common Interest, Confidentiality and Joint Defense Agreement executed by the Parties as of March 15, 2023 (the "**JDA**"). In the event that the Closing hereunder shall not occur for any reason whatsoever, River District shall promptly return PSCo's Due Diligence Deliveries to PSCo and shall destroy all copies and abstracts thereof.

4.2 Right of Inspection.

(a) During the Due Diligence Period and prior to Closing, River District shall, at its own cost and expense, have the right to review all aspects of the Shoshone Water Rights and conduct such inspections as it determines are necessary for completion of the transaction. River District shall schedule and coordinate all physical inspections of the Shoshone Water Rights and/or the Power Plant with PSCo and shall give PSCo at least seven (7) days' prior notice thereof. The River District, and its authorized agents and employees, must be escorted by a badged PSCo representative at all times while the River District is at the Power Plant or on other PSCo-owned property. The River District, and its authorized agents and employees, must observe PSCo's safety and security policies at all times while at the Power Plant or on other PSCo-owned property. PSCo shall reasonably cooperate with River District's inspections (including without limitation River District's interviews with PSCo personnel) so long as such cooperation is at no material expense to PSCo. River District shall not, in connection with its investigations, unreasonably interfere with Power Plant operations.

(b) To the extent allowed by applicable law, the River District shall indemnify, defend and hold PSCo harmless from and against all costs, expenses, damages, liabilities, liens or claims, including, without limitation, attorneys' fees and court costs, directly related to any entry on property associated with the Power Plant or Shoshone Water Rights by the River District, its agents, employees or contractors in the course of performing inspections, tests and/or inquiries provided for under this Agreement, or resulting from any conditions on such property created by River District's entry and testing (but not including any claims resulting from the discovery or disclosure of pre-existing physical or environmental conditions or any claims resulting solely from the gross negligence or willful misconduct of PSCo or its agents, representatives, employees or contractors). The foregoing indemnity shall survive the Closing Date or earlier termination of this Agreement.

4.3 Due Diligence Review; Approval. River District shall promptly commence, and shall diligently and in good faith pursue, its due diligence reviews hereunder within the Due Diligence Period. If, prior to the expiration of the Due Diligence Period, based upon such review, examination or inspection, River District determines in its sole and absolute discretion that it no longer intends to acquire the Shoshone Water Rights, the River District shall promptly notify PSCo of such determination in writing (“**Disapproval Notice**”) whereupon this Agreement, and the obligations of the Parties to purchase and sell the Shoshone Water Rights, shall terminate, except those provisions that expressly survive the termination hereof, and the Initial Deposit shall be returned to the River District. If River District fails to deliver the Disapproval Notice to PSCo on or before the expiration of the Due Diligence Period, River District shall be deemed to have approved of all of the foregoing matters, and the transaction shall proceed to Closing, subject to completion of the Closing Conditions described in Section 4.4, below. In the event River District fails to deliver the Disapproval Notice on or before the expiration of the Due Diligence Period, River District shall be deemed to have accepted the condition of the Shoshone Water Rights in their “AS IS, WHERE IS” and “WITH ALL FAULTS” condition subject to the representations and warranties expressly made by PSCo in this Agreement.

4.4 Conditions Precedent to Obligations of River District and PSCo to Close. In addition to the River District’s approval of its due diligence review as provided in Section 4.3, PSCo and River District agree that the Parties’ obligation to complete the transaction hereunder shall be subject to the satisfaction or mutually agreed upon waiver of the following conditions at or prior to Closing (the “**Closing Conditions**”):

(a) Negotiate Use of the Shoshone Water Rights by CWCB for Instream Flow Purposes. The Parties agree to use their best efforts to mutually negotiate an agreement between the PSCo, the River District, and the Colorado Water Conservation Board (“**CWCB**”) to enable the Shoshone Water Rights to be used for instream flow purposes when they are not being used for power generation purposes (the “**Instream Flow Agreement**”). The Instream Flow Agreement shall be executed prior to filing the Change Application described in Section 4.4(c), below, *provided however* that the Instream Flow Agreement will be effective as of the Closing Date of this Agreement, and will be held in escrow by the Parties pending delivery at Closing. The Instream Flow Agreement with the CWCB shall include the following provisions:

1. Use of the Shoshone Water Rights by the CWCB shall be subject to the lease of said water rights after Closing by the River District, as lessor, to PSCo, as lessee, for continued hydroelectric generation purposes (the “**Lease**”).
2. PSCo’s continued use of the Shoshone Water Rights pursuant to the Lease shall have precedence over use of the said water rights for instream flow purposes.
3. The use of the Shoshone Water Rights by the CWCB shall be conditioned upon the Closing of this Agreement and the issuance of a final Water Court Decree (as defined in Section 4.4(c) below), which changes the use of the Shoshone Water Rights to include instream flow purposes.

(b) Negotiate with Certain Potential Water Court Objectors. As described in subsection (c), below, the Parties intend to file a joint application to change the Shoshone Water Rights to include instream flow uses as an additional decreed use. Prior to filing such application, the Parties agree to use their best efforts to identify third parties who would likely file statements of opposition to the Change Application, and to enter into negotiations with said third parties to address their concerns with the goal of eliminating or minimizing objections to the Change Application. Closing is not specifically dependent on the Parties' success in reaching an agreement or stipulation with any of the potential water court objectors.

(c) Obtain Decree for Change of Shoshone Water Rights. The Parties and the CWCB will file an application with the Water Court, Water Division 5, seeking to change the Shoshone Water Rights to add instream flow uses as an additional decreed use (the "**Change Application**"). The Parties agree to prosecute the Change Application with diligence with the goal of obtaining a final decree (the "**Water Court Decree**"), with all rights of appeal exhausted or expired, by June 30, 2026; provided, however, that the deadline for completion of litigation may be extended by the Parties by mutual agreement to address unforeseen circumstances in completing the litigation. Should PSCo, in its sole and absolute discretion, determine that the adjudication of the Change Application would negatively impact the Shoshone Water Rights, impair PSCo's ability to continue hydroelectric generation at the Power Plant, or otherwise impair significant PSCo business interests, PSCo may withdraw the Change Application and terminate this Agreement. Should the River District, in its sole and absolute discretion, determine that the adjudication of the Change Application would prevent the acquisition of these rights from providing the intended benefit, the River District may withdraw the Change Application and terminate this Agreement.

Should either Party make a determination to withdraw the Change Application in accordance with this subparagraph (c), such Party shall provide notice of its intent to withdraw to the other Party, and the Parties shall then have sixty (60) days (the "**Review Period**") from the date of such notice during which the Parties shall discuss the concerns of the issuing Party and attempt to resolve those concerns and prevent withdrawal of the Change Application and termination of this Agreement. If the Parties are unable to resolve the issuing Party's concerns within the Review Period, the Party who issued the notice may withdraw from the Change Application and terminate this Agreement.

(d) Negotiate Amendment of Shoshone Relaxation Agreement with Denver Water. Effective January 1, 2007, PSCo entered into that certain Agreement Concerning Reduction of Shoshone Call (the "**Relaxation Agreement**") with the City and County of Denver, acting by and through its Board of Water Commissioners ("**Denver Water**"). The Parties to this Agreement will seek to negotiate the following amendments to the Relaxation Agreement with Denver Water (the "**Amendment to the Relaxation Agreement**"), to be effective upon Closing of this Agreement:

1. Modify the term of the Relaxation Agreement to be perpetual instead of terminating on February 28, 2032;
2. Allow all or part of the Relaxation Agreement to be assigned by PSCo to the River District if PSCo permanently ceases operation of the Power Plant;

3. Remove or modify the bidding rights granted to Denver in paragraph 13 of the Relaxation Agreement;

4. Include new provisions that would provide for the Relaxation Agreement to continue to operate in a manner that replicates historical Power Plant outages for regular maintenance activities if Power Plant operations permanently cease and the Shoshone Water Rights are used solely for instream flow purposes.

(e) Approval of the Public Utility Commission. PSCo shall obtain any final, non-appealable, approvals and decisions from the Colorado Public Utilities Commission (“**PUC**”) legally required to effectuate the transaction contemplated by this Agreement (the “**PUC Decision**”), which must be fully acceptable to PSCo, and shall not impose any unsatisfactory conditions nor revise the terms and conditions of this Agreement, PSCo’s tariffs, or any related agreements in any material respect. PSCo shall commence the approval process with the PUC upon satisfaction of Section 4.4(a), (c) and (d) and receipt from the River District of evidence that the River District has sufficient funds to make the Closing Payment. The Parties shall cooperate to seek such PUC Decision, including, without limitation, preparing responses to any information requests, providing any testimony or witnesses, and filing any supporting briefs or affidavits as may be useful and helpful to obtain regulatory approval. PSCo agrees to pursue the PUC Decision with diligence with the goal of obtaining the same by twelve (12) months from the date of PSCo’s first public filing in the PUC approval process; provided, however, that the deadline for obtaining the PUC Decision may be extended by the Parties by mutual agreement to address unforeseen circumstances in completing the PUC approval process. PSCo, in its sole and absolute discretion, shall have the right to file any application for rehearing, reargument, and reconsideration with the PUC or to appeal any decision of the PUC to the courts.

(f) River District Financing. River District shall have available sufficient funds to make the Closing Payment to PSCo, and evidence of the same must be submitted to PSCo prior to commencing the PUC process outlined in subsection (e) immediately above. The Parties recognize that the River District anticipates a portion of the Closing Payment will be paid using funding from governmental funding sources (i.e. municipal, county, state, or federal governments or agencies, including but not limited to the River District) and that evidence of available sufficient funds from governmental sources in this paragraph shall include funds that are appropriated and/or otherwise committed by the governmental entity or entities toward the purchase of the Shoshone Water Rights.

(g) Release of PSCo Corporate Indenture. Following expiration of the Due Diligence Period, PSCo shall make application for a release of the Shoshone Water Rights from the lien of PSCo’s corporate indenture (“**Indenture Release**”). In the event the Indenture Release is not issued, for any reason, on or before Closing, PSCo may, at PSCo’s option, extend the Closing Date by written notice to River District for up to six (6) successive thirty (30) day periods or until such Indenture Release is issued.

(h) Waiver of Closing Conditions. The conditions set forth in Section 4.4(a) through (g) are for the mutual benefit of River District and PSCo. Unless stated otherwise therein, to the extent that one or more of the Closing Conditions have not been satisfied, the Parties may only waive such Closing Condition by mutual agreement in writing.

4.5 Termination.

(a) Except as may otherwise be indicated, if any of the conditions expressly set forth in Sections 4.4(a)-(f) have not been satisfied, extended or waived by mutual agreement of the Parties by December 31, 2027, or in the event of termination pursuant to Section 5.2(c), this Agreement may be terminated, with both Parties consenting to and acknowledging such termination in writing, and the terms hereof shall be of no further force and effect, except those provisions that expressly survive the termination hereof. In the event of termination in accordance with this Section 4.5(a), the Initial Deposit, and any accrued interest thereon, shall be released to PSCo.

(b) In the event of termination pursuant to Section 4.3, Section 4.4(g), and Section 5.1(h), the Initial Deposit, and any accrued interest thereon, shall be released to the River District.

(c) If this Agreement is terminated pursuant to a termination right expressly set forth in this Section 4.5, then:

1. within ten (10) business days following such termination and to the extent not otherwise prohibited by applicable law, River District shall deliver to PSCo all of the PSCo Due Diligence Deliveries it holds in non-electronic form or shall certify the destruction of same;
2. any documents deposited with Escrow Holder by River District shall be returned to River District, and any documents deposited with Escrow Holder by PSCo shall be returned to PSCo;
3. the Parties shall equally share any cancellation fee of the Escrow Holder;
4. the Parties shall withdraw the Change Application if it is pending, with a preference to withdraw the Change Application without prejudice;
5. PSCo shall withdraw the PUC application if it is pending;
6. if the Instream Flow Agreement has been finalized, the Parties and CWCB shall terminate such agreement;
7. if the Amendment to the Relaxation Agreement has been finalized, the Parties and Denver Water shall terminate such agreement;
8. the Parties shall execute all documents necessary to direct the Escrow Holder to release the Initial Deposit, in accordance with Sections 4.5(a) and 4.5(b) above; and
9. neither Party shall have any further obligations to the other hereunder, except for those obligations and indemnities which are expressly made to survive the termination.

(d) If the transaction contemplated by this Agreement is terminated prior to the Closing Date, PSCo, within ninety (90) days after the termination, shall provide an accounting of its actual Transaction Costs as of the date of termination to the River District and

1. if the actual Transaction Costs have not exceeded the Transaction Cost Prepayment, PSCo shall within that ninety (90) day period return to the River District any unapplied balance of the Transaction Cost Prepayment; or
2. if the actual Transaction Costs have exceeded the Transaction Cost Prepayment, the River District shall within that ninety (90) day period pay to PSCo the amount of the Transaction Costs which have exceeded the Transaction Cost Prepayment.

Before any funds may be transferred to the River District as contemplated by this paragraph, the River District must provide a signed W-9 to PSCo, be set up as a vendor in PSCo's billing/accounting system, provide its wiring instructions to PSCo, and participate in a wire confirmation call with PSCo.

(e) Pre-Closing Default. EXCEPT FOR THE RELEASE OF THE INITIAL DEPOSIT TO PSCo WHERE SPECIFIED HEREIN AND THE PAYMENT OF INCURRED TRANSACTION COSTS TO PSCo, SUBJECT TO ACCOUNTING IN THE EVENT OF TERMINATION, THE PARTIES HEREBY SPECIFICALLY WAIVE ANY SPECIAL, CONSEQUENTIAL, PUNITIVE, SPECULATIVE OR DIRECT DAMAGES AND ANY RIGHT EITHER PARTY MAY HAVE TO SPECIFIC PERFORMANCE IN THE EVENT OF A TERMINATION PURSUANT TO THIS SECTION 4.5.

ARTICLE 5. REPRESENTATIONS, WARRANTIES, AND COVENANTS

5.1 PSCo's Representations and Warranties. PSCo represents and warrants to River District as of the Effective Date and again as of Closing as follows:

(a) PSCo is a Colorado corporation, duly organized and validly existing and in good standing under the laws of the State of Colorado.

(b) This Agreement and all documents executed by PSCo that are to be delivered to River District at the Closing are, or at the time of Closing will be, duly authorized, executed and delivered by PSCo and are, or at the time of Closing will be, legal, valid and binding obligations of PSCo.

(c) To the best of PSCo's knowledge as of the Effective Date, PSCo has received no notice from any governmental authority with jurisdiction over the Shoshone Water Rights of any current violation of any laws or regulations applicable to the Shoshone Water Rights.

(d) To the best of PSCo's knowledge, there is no material litigation pending or threatened against PSCo that arises out of the ownership of the Shoshone Water Rights.

(e) To the best of PSCo's knowledge, no condemnation or other eminent domain proceedings are pending or threatened against the Shoshone Water Rights.

(f) PSCo is not and has never been a “foreign person” within the meaning of Section 1445 of the Internal Revenue Code of 1986, as amended, and any applicable regulations promulgated thereunder. Neither PSCo nor, to PSCo’s knowledge, any of its affiliates or their respective partners, members, shareholders or other equity owners is a person or entity with whom U.S. Persons or entities are restricted from doing business under regulations of the Office of Foreign Asset Control (“OFAC”) of the Department of the Treasury or under any statute, executive order, or other governmental action.

(g) To the best of PSCo’s knowledge, PSCo has not received any written notice that the Shoshone Water Rights are in breach of any “Environmental Requirements,” meaning all laws, ordinances, statutes, codes, rules, regulations, agreements, judgments, orders, and decrees, now or hereafter enacted, promulgated or amended, of the United States, the State of Colorado, local governmental entities or any other political subdivision or agency exercising jurisdiction over the owner of the Shoshone Water Rights, the Shoshone Water Rights, or the use of the Shoshone Water Rights, relating to pollution, the protection or regulation of human health, natural resources, or the environment, or the emission, discharge, release or threatened release of pollutants, contaminants, chemicals of industrial, toxic or hazardous substances or waste or hazardous materials into the environment (including, without limitation, ambient air, surface water, ground water or land or soil).

(h) **To the extent that PSCo becomes aware after the Effective Date and prior to the Closing that any of the representations and warranties set forth in this Section 5.1, are no longer true and correct, PSCo shall promptly, and in any event prior to the Closing, provide River District with written notice thereof and explain in reasonable detail the facts giving rise to the change. Unless PSCo elects to cause and does cause the representation or warranty to again become true or correct prior to Closing, River District shall have the right to terminate the Agreement based any changes in the representations set forth in Section 5.1.**

The representations and warranties of PSCo set forth in Section 5.1, as updated as of the Closing Date in accordance with the terms of this Agreement, shall survive Closing for a period of six (6) months (the “**Survival Period**”), and upon expiration thereof shall be of no further force or effect except to the extent that, with respect to any particular alleged breach, River District gives PSCo written notice so as to be received by PSCo on or before the expiration of the Survival Period of such alleged breach with sufficient detail summarizing the nature of such alleged breach (a “**Claim Notice**”) and files an action against PSCo with respect thereto within sixty (60) days of the date of such Claim Notice. Notwithstanding anything to the contrary contained herein, PSCo shall have no liability to the River District for the breach of any representation or warranty made in this Agreement or in PSCo’s closing documents unless the loss resulting from PSCo’s breach of its representations and warranties exceeds, in the aggregate, Twenty-Five Thousand Dollars (\$25,000.00), in which event PSCo shall be liable for each dollar of damages resulting from the breach or breaches of its representations and warranties, but in no event shall PSCo’s total liability for any such breach or breaches exceed, in the aggregate, five percent (5%) of the Purchase Price (the “**Cap**”); provided, however, that the Cap shall not apply to any claims made by River District due to any PSCo fraud. In no event shall any claim for a breach of any representation or warranty of PSCo be actionable or payable if the breach in question results from or is based on a condition, state of facts or other matter which was actually known by River District or any of River District’s

employees, without any duty of inquiry, prior to Closing. PSCo shall indemnify and defend River District, its directors, officers, employees, agents, successors and assigns from and against any claim, loss, liability or expense, including reasonable attorneys' fees that, during the Survival Period, arise out of or result from the breach by PSCo of any of the foregoing representations or warranties.

With the sole exception of the representations and warranties set forth in this Agreement or in the closing documents executed by PSCo at Closing ("**PSCo Closing Documents**"), the agreement between River District and PSCo for the sale of the Shoshone Water Rights is made without representation or warranty of any kind by PSCo. With the sole exception of the representations and warranties set forth in this Agreement or in the PSCo Closing Documents, PSCo makes no representation or warranty of any kind with regard to the quality or quantity of the Shoshone Water Rights or the physical condition of any infrastructure associated therewith, with regard to any restrictions, requirements, costs or constraints that may be associated with the Shoshone Water Rights, or with regard to the suitability of the Shoshone Water Rights for River District's purposes, it being the parties' express understanding and agreement that River District shall fully inspect the Shoshone Water Rights and all aspects thereof during the Due Diligence Period and prior to Closing, and that River District will rely solely upon its own inspection in determining the physical condition and other features of the Shoshone Water Rights, any restrictions, requirements, costs or constraints that may be associated with the Shoshone Water Rights, and whether the Shoshone Water Rights are suitable for River District's intended purposes. With the sole exception of the representations and warranties set forth in this Agreement or in the PSCo Closing Documents, River District will acquire the Shoshone Water Rights in an "AS IS" and "WITH ALL FAULTS" condition. Without limiting the generality of the foregoing, except to the extent the representations and warranties set forth in this Agreement or in the PSCo Closing Documents are not true and correct, River District, for itself and its successors and assigns, releases PSCo and PSCo's agents, employees, managers, members, brokers, contractors and representatives from, and waives any and all causes of action or claims against any of such persons for, (a) any and all liability attributable to any physical condition of Shoshone Water Rights, including, without limitation, the presence of any hazardous materials; and (b) any and all liability resulting from the failure of the Shoshone Water Rights to comply with any applicable laws, including, without limitation, any environmental laws. Wherever herein a representation is made based upon the knowledge of, or notice to, PSCo, such knowledge or notice, is limited to the actual knowledge without duty of inquiry of, or notice received by Donald Hartinger, Director, Plant Operations, and Patrick Martinez, Sr. Manager, Operations, all of Xcel Energy Services Inc., provided nothing in this Agreement will be deemed to be a representation made by any named individual other than in their respective representative capacity, and the River District hereby expressly releases such individuals from any and all personal liability arising out of this Agreement or the representations made herein.

5.2 River District's Representations and Warranties. River District hereby represents and warrants to PSCo as of the Effective Date and again as of Closing as follows:

(a) River District is a body corporate and politic and a political subdivision of the state of Colorado duly organized and validly existing under the laws of the state of Colorado, with full right, power and authority to take title to the Shoshone Water Rights and to enter into and otherwise perform and comply with the terms of this Agreement.

(b) This Agreement and all documents executed by River District that are to be delivered to PSCo at the Closing are, or at the time of Closing, will be duly authorized, executed and delivered by River District and are, or at the time of Closing will be legal, valid and binding obligations of River District.

(c) To the extent that River District becomes aware after the Effective Date and prior to the Closing that any of the representations and warranties set forth in Section 5.2 are no longer true and correct, River District shall promptly, and in any event prior to the Closing, provide PSCo with written notice thereof and explain in reasonable detail the facts giving rise to the change. Unless River District elects to cause and does cause the representation or warranty to again become true or correct prior to Closing, PSCo shall have the right to terminate the Agreement based on any material change in the representations set forth in Section 5.2.

(d) The representations and warranties of River District set forth in Section 5.2 as updated as of the Closing in accordance with the terms of this Agreement, shall survive Closing for a period of six (6) months.

5.3 PSCo's Covenants. Between the Effective Date and the Closing or earlier termination of this Agreement, or for such other time period as set forth below, PSCo covenants and agrees as follows:

(a) PSCo shall operate and maintain the Shoshone Water Rights in substantially the same manner in which PSCo is currently operating the Shoshone Water Rights, subject to outages at the Power Plant due to necessary maintenance and repairs.

(b) Except for the existing lien of PSCo's corporate Indenture, PSCo shall not sell, mortgage, pledge, transfer or dispose of the Shoshone Water Rights, or any interest therein, except as contemplated as a condition of this Agreement. PSCo shall not create any new encumbrances on, or limitations on the exercise of, the Shoshone Water Rights.

(c) PSCo will not directly or indirectly solicit, actively encourage, initiate, entertain, substantively review, or participate in any negotiations or discussions with any other person or entity with respect to any offer or proposal to sell or finance the Shoshone Water Rights or any part thereof.

ARTICLE 6. CLOSING

6.1 Date and Location. The closing of this transaction (the "**Closing**") shall occur at a mutually agreeable time and place as the Parties and Escrow Holder may mutually agree to in writing, but not later than sixty (60) days following issuance of the PUC Decision and the expiration of all periods of appeal of such decision without contest (the "**Closing Date**").

6.2 Transactions at Closing.

(a) On or before the Closing Date, PSCo shall deliver or cause to be delivered to the Escrow Holder, with appropriate instructions for recording and disbursement consistent with this Agreement, the following documents duly executed and acknowledged where appropriate:

1. The Special Warranty Deed substantially in the form of Exhibit C.
2. The Lease to PSCo substantially in the form attached as Exhibit D.
3. The Indenture Release.
4. A Certificate of non-foreign status pursuant to Section 1445 of the Internal Revenue Code of 1986, as amended, together with any Certificates required pursuant to Colorado law.
5. The Amendment to the Relaxation Agreement.
6. The PUC Decision.
7. A W-9 Form.
8. Such other documents as may be reasonably necessary and appropriate to complete the Closing as contemplated herein.

(b) On or before the Closing Date, River District shall deliver or cause to be delivered to the Escrow Holder, with appropriate instructions for recording and disbursement consistent with this Agreement, the following documents to be duly executed and acknowledged where appropriate:

1. An executed Promissory Note substantially in the form attached as Exhibit E.
2. A Deed of Trust substantially in the form attached as Exhibit F.
3. The Lease.
4. The Instream Flow Agreement.
5. The Water Court Decree.
6. A W-9 Form.
7. Such other documents as may be reasonably necessary and appropriate to complete the Closing contemplated herein.
8. The Closing Payment.
9. The Final Transaction Costs, if any.

(c) Each Party shall, at Closing or from time-to-time prior to Closing, execute and deliver such further instruments, affidavits, and documents as the other Party or the Escrow Holder may reasonably request to effectuate the intent of this Agreement or as required by applicable law.

(d) The Escrow Holder shall record and/or distribute the Closing Documents and shall release the Initial Deposit, the Closing Payment, and Final Transaction Costs to PSCo.

(e) River District shall pay for the cost of recording of all deeds. The Parties shall each pay for one-half (1/2) of the cost of recording any of the other Closing Documents. The Parties shall each pay one-half (1/2) of the Escrow Holder costs. Except as provided in Section 3.1(c) above, each Party shall pay its own attorneys' fees.

ARTICLE 7. GAINS ON SALE

The River District recognizes and agrees that any decision on how PSCo allocates or uses the gains on sale, if any, from the transaction contemplated by this Agreement (the “**Gains**”) is a business decision within the discretion of PSCo. In addition to the foregoing, the Parties recognize and agree that the allocation or use of the Gains may be limited by the PUC Decision.

PSCo and the River District share an interest in the ecological and environmental health of the Colorado River. The Parties also share an interest in the benefits of emerging and next-generation utility projects, and PSCo plans to pursue these types of projects across Colorado. Should PSCo identify a project located in the western Colorado region served by the River District which advances these shared interests, and which provides a benefit to PSCo's ratepayers across the State of Colorado, and should PSCo decide to allocate, use or invest any of the Gains to finance such a project, the Parties agree to work together to promote such projects.

Notwithstanding the foregoing, the River District will not make any public statements in opposition to PSCo's business decisions on how to allocate or use the Gains in accordance with Section 4.4(e).

ARTICLE 8. POST-CLOSING DEFAULTS AND REMEDIES

8.1 Events of Default. After Closing, each of the following shall constitute an “**Event of Default**”:

(a) Default by either Party in the due and punctual performance of any of its covenants, conditions, agreements, payments or other provisions contained in this Agreement on its part to be performed, if such default continues for thirty (30) days after written notice specifying such default and requiring the same to be remedied is given by the non-defaulting Party; provided that if such default cannot be cured within such thirty (30) days, and during such period corrective action has commenced to remedy such default and subsequently is diligently pursued to the completion of such performance, an Event of Default shall not be deemed to have occurred until one hundred and twenty (120) days after written notice has been delivered.

(b) Subject to any of the survival provisions of Sections 5.1 and 5.2 (Survival), any of the representations or warranties made by a Party shall prove to have been materially incorrect under the circumstances when made.

8.2 Remedies, Generally. Upon the occurrence and continuation of an Event of Default, the following remedies shall be available to the Parties:

(a) Except as provided in Section 8.2(b) below, if an Event of Default by PSCo, River District may in its sole discretion:

1. Waive such default or condition; or

2. If the Event of Default by PSCo is not cured as provided in Section 8.1, above, River District shall have the right to damages, EXCEPT THAT RIVER DISTRICT SPECIFICALLY WAIVES ANY SPECIAL, CONSEQUENTIAL, PUNITIVE, SPECULATIVE OR INDIRECT DAMAGES.

(b) If the Event of Default consists of a default by River District under Section 8.1, above, PSCo may in its sole discretion:

1. Waive such default or condition; or

2. If the Event of Default by River District is not cured as provided in Section 8.1, above, PSCo shall have the right to damages, EXCEPT THAT PSCo SPECIFICALLY WAIVES ANY SPECIAL, CONSEQUENTIAL, PUNITIVE, SPECULATIVE OR INDIRECT DAMAGES.

ARTICLE 9. NOTICES

Any notice, demand, claim or other written instrument required or permitted to be given pursuant to this Agreement shall be in writing signed by the Party giving such notice and shall be sent by electronic mail, hand messenger delivery, overnight courier service or certified mail (receipt requested) to the other Party at the addresses set forth below and shall be deemed to have been duly given by delivery to the respective addresses provided below, or such other address changed by the recipient by notice consistent with this Article: (i) on the date and at the time of delivery if delivered personally to the Party to whom notice is given at such address; (ii) on the date and at the time of delivery or refusal of acceptance of delivery if delivered or attempted to be delivered by an overnight courier service to the Party to whom notice is given as such address; (iii) on the date of delivery or attempted delivery shown on the registered or certified mail, return receipt requested, postage prepaid and properly addressed to such address; (iv) if an email address is specified, on the date and at the time shown on the sent email message if sent to the e-mail address specified below:

| | |
|-------------|---|
| If to PSCo: | Public Service Company of Colorado Attn: Environmental Services - Water Resources 1800 Larimer Street, Suite 1300 Denver, CO 80202 |
|-------------|---|

| | |
|---------------|--|
| With Copy to: | Public Service Company of Colorado Attn: Director, Community Relations 1800 Larimer Street, Suite 1400 Denver, CO 80202 |
|---------------|--|

and: Xcel Energy
Attn: Frances A. Folin, Esq.
1800 Larimer Street, 14th Floor
Denver, CO 80202
Frances.A.Folin@xcelenergy.com

and: Welborn Sullivan Meck & Tooley, P.C.
1401 Lawrence Street, Suite 1800
Denver, CO 80202
Attn: Carolyn Burr, Esq.; James M. Noble, Esq.
cburr@wsmtlaw.com
jnoble@wsmtlaw.com

If to River District: Andy Mueller, Esq.
General Manager
Colorado River Water Conservation District
201 Centennial St., #200
Glenwood Springs, CO 81601
amueller@crwcd.org

With Copy to: Peter Fleming, Esq.
General Counsel
Colorado River Water Conservation District
201 Centennial St., #200
Glenwood Springs, CO 81601
pfleming@crwcd.org

If to Escrow Holder: First American Title Insurance Company
1380 17th Street
Denver, CO 80202
Attn: Nichole Segura, Vice President
303.876.1112
nsegura@firstam.com

ARTICLE 10. MISCELLANEOUS

10.1 No Third-Party Beneficiary: No Waiver of Governmental Immunity. This Agreement shall not create any duty of care or liability with respect to any person or entity not a Party to this Agreement, or waive any of the privileges or immunities River District or its officers, employees, successors and assigns may present pursuant to law, including, but not limited to, the Colorado Governmental Immunity Act, C.R.S. 24-10-101, et seq., as amended.

10.2 Limits on Governmental Immunity. River District represents that, pursuant to C.R.S. Section 24-10-106, its governmental immunity is limited to claims for injury that lie in tort or could lie in tort. Under existing law, River District is not entitled to raise the defense of

sovereign immunity in connection with any legal proceeding to enforce or collect upon contractual obligations, including this Agreement, or any amendments or exhibits to this Agreement, including the payment of any amounts due thereunder, provided however that no term or condition of this Agreement shall be construed or interpreted as a waiver, express or implied, of any of the privileges or immunities River District, its officers, employees, successors or assigns may present pursuant to law, including but not limited to the Colorado Governmental Immunity Act, C.R.S. Section 24-10-101 et seq., as amended.

10.3 Mediation. If any dispute arises under this Agreement (including as to whether either Party has breached this Agreement or whether an Event of Default has occurred), then either Party may require that the other engage in nonbinding dispute resolution processes upon delivery of a written notice (a “**Dispute Notice**”) setting forth the disputed matter. Upon receipt by the other party of such Dispute Notice, the Parties shall use commercially reasonable efforts to negotiate a resolution of the dispute for a period of sixty (60) days (the “**Dispute Resolution Period**”) which may include mediation using a mediator chosen by the Parties. During the Dispute Resolution Period, no Party may bring a claim or commence legal action related to or in connection with the matter set forth in the Dispute Notice until the Dispute Resolution Period ends. This section shall not alter any date in this Agreement, unless the Parties agree otherwise in writing.

10.4 Time. Except as otherwise provided in this Agreement, time is of the essence as to each provision of this Agreement and the performance of each Party’s obligations hereunder.

10.5 Attorneys’ Fees. If any legal action or other proceeding is commenced to enforce or interpret any provision of this Agreement, the prevailing Party (defined below) shall be awarded its attorneys’ fees and expenses, in addition to any other relief granted. The phrase “**Prevailing Party**” shall include the Party who receives substantially the relief desired whether by dismissal, summary judgment, judgment or otherwise. This provision shall survive the termination of this Agreement.

10.6 No Waiver. No waiver by any party of the performance or satisfaction of any covenant or condition shall be valid unless in writing and shall not be considered to be a waiver by such party of any other covenant or condition hereunder. Any failure of a Party to enforce any of the provisions of this Agreement or to require compliance with any of its terms at any time during the pendency of this Agreement shall in no way affect the validity of this Agreement, or any part hereof, and shall not be deemed a waiver of the right of such Party thereafter to enforce any and each such provision.

10.7 Entire Agreement. This Agreement contains the entire agreement between the Parties. This Agreement may only be modified by mutual written agreement duly authorized and executed by the Parties.

10.8 Survival. The provisions of this Section and Sections 3.1(d), 4.2, 4.3, 5.1, 5.2, and 10.5 shall survive the Closing or any earlier termination of this Agreement.

10.9 Publicity. Neither PSCo nor River District shall issue any public announcement referencing the Purchase Price or the other economic terms of this Agreement without the prior

written consent of the other. The Parties agree to work cooperatively and in good faith to jointly prepare all public announcements involving this Agreement.

10.10 Assignment. River District may not assign or otherwise transfer this Agreement or any of its rights or obligations hereunder without first obtaining PSCo's prior consent and approval thereto.

10.11 Governing Law and Construction. This Agreement, including any instrument or agreement required hereunder, and all matters arising out of or in connection with this Agreement (whether in contract, tort or otherwise) shall be construed in accordance with and governed by the laws of the State of Colorado without giving effect to any conflict of law principles that would require the application of the laws of another jurisdiction. The Parties hereby agree that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any amendments or exhibits hereto.

10.12 Venue. All actions or proceedings arising out of or relating to this Agreement and any dispute shall be litigated in the District Court in Garfield County, Colorado. Each Party accepts for itself, generally and unconditionally, the exclusive jurisdiction and venue of the aforesaid court, submits itself to the personal jurisdiction of such courts and waives any defense of forum non conveniens or any similar defense. Each Party hereby waives its respective right to a trial by jury for any claim or cause of action based upon or arising out of or related to this Agreement in any action, proceeding, or other litigation of any type brought by any Party against any other Party, whether with respect to contract claims, tort claims, or otherwise. Each Party agrees that any such claim or cause of action will be tried by a court trial without a jury.

10.13 Joint Effort. Preparation of this Agreement has been a joint effort of the Parties and the resulting document shall not be construed more severely against one Party than against the other Party.

10.14 Days. In the event any time period set forth in this Agreement commences, expires or is determined from a date which falls on a Saturday, Sunday, legal holiday of the State of Colorado, the date of such commencement, performance, expiration or determination shall automatically be extended to the next business day. As used in this Agreement "business day" means any day except any Saturday, Sunday, any day which is a Federal or State of Colorado legal holiday, or any day on which banking institutions in the State of Colorado are authorized or required by law or other governmental action to close.

10.15 Counterparts; Electronic Signatures. This Agreement may be executed in any number of multiple counterparts, each of which shall be deemed to be an original copy and all of which shall constitute one agreement, binding on all parties hereto. PDF or DocuSign signatures shall be sufficient to bind the Parties.

10.16 Integrated Agreement. This Agreement, including all exhibits referenced herein, constitutes the complete, unseverable, unitary, integrated agreement between PSCo and River District concerning the subject matter hereof. The parties hereto acknowledge that they negotiated this Agreement, including all exhibits, as a single transaction and would not have entered into any

portion of the Agreement without the rights and obligations conferred by the Agreement as a whole. In the event of a conflict between the terms of this Agreement and any exhibits, the terms of this Agreement shall control unless such exhibit specifically identifies the Section(s) of this Agreement that will be superseded.

10.17 Approval.

(a) THE OBLIGATIONS OF THE RIVER DISTRICT ARE EXPRESSLY CONTINGENT UPON THE APPROVAL OF THIS AGREEMENT BY THE BOARD OF DIRECTORS OF THE RIVER DISTRICT.

(b) The River District's Board will not publish notice of its intent to consider this Agreement for approval, in accordance with Colorado law, until receiving written confirmation of final approval of this Agreement by the Board of Directors of PSCo and its parent company. Upon confirmation of the River District's Board's approval of this Agreement at a public meeting, each Party shall execute and deliver the Agreement to the other. The Parties may elect and mutually agree to a time and place for in-person execution of this Agreement.

10.18 Requirement of Good Faith and Reasonable Judgment. Unless otherwise expressly provided in this Agreement, all decisions to be made by a Party or jointly by the Parties shall be interpreted to require the exercise of each Party's reasonable judgment, acting in good faith, in rendering such decision.

10.19 Severability. In case any one or more of the provisions contained in this Agreement for any reason is held to be invalid or unenforceable, the invalidity or unenforceability will not affect any other provision of this Agreement, which will be construed as if the invalid or unenforceable provision had not been contained in this Agreement and, in lieu of each invalid or unenforceable provision, there will be added automatically as a part of this Agreement a provision as similar in terms to the invalid or unenforceable provision as may be possible and be valid and enforceable.


10.20 No Warranty of Tax Treatment. Each party is relying solely on itself and its own tax advisors regarding the tax treatment of the transactions contemplated under this Agreement.

10.21 Cooperation. At the request of the other Party, each Party, on its own behalf, covenants that it shall reasonably cooperate with the other Party, at no cost to the cooperating Party, except as provided in Section 3.1(d), in negotiating with other parties, or obtaining governmental approvals which are required to implement the Agreement.

[Signatures on Next Page]

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the Effective Date.

Public Service Company of Colorado, a
Colorado Corporation:

By: 
Name: Robert S. Kenney
Title: President, Public Service Company of
Colorado

Colorado River Water Conservation District, a
political subdivision of the State of Colorado


By: 
Name: Kathy Chandler-Henry
Title: President, Colorado River Water
Conservation District

EXHIBIT A
ESCROW AGREEMENT

See attached.



1380 17th Street
Denver, CO 80202

ESCROW INSTRUCTIONS

File # _____

First American Title Insurance Company (“Escrow Agent”), hereby agrees to act as the escrow agent for funds deposited with it by the other parties to this Escrow Agreement (“the Agreement”) under the terms and conditions set forth herein.

1. Colorado River Water Conservation District, a political subdivision of the state of Colorado (“Purchaser”), hereby deposits, in escrow with Escrow Agent, funds in the amount of FIVE HUNDRED THOUSAND and 00/100 DOLLARS (\$500,000.00) (the “Escrowed Funds”).

2. Escrow Agent is authorized to hold the Escrowed Funds in a segregated deposit account. The segregated deposit account [*check one*: X shall _____ shall not] be an interest-bearing deposit account.

3. If Public Service Company of Colorado, a Colorado corporation (“Seller”) and Purchaser do not jointly and timely authorize the closing of the transaction contemplated by that certain Purchase and Sale Agreement dated effective as of January 1, 2024 by and between Seller and Purchaser (the “PSA”), or if the PSA is terminated by either party pursuant to the terms thereof, Escrow Agent is instructed to follow the terms of the PSA with respect to the Escrowed Funds. Additionally, Escrow Agent shall obtain the written permission of both parties hereto prior to disbursing the Escrowed Funds. In doing so, Escrow Agent shall be relieved of any further responsibility or liability in connection with this Agreement or the Escrowed Funds.

4. The parties hereto agree that Escrow Agent has not yet made a search of the public records with respect to the transaction contemplated under the PSA, nor has Escrow Agent any documents deposited with Escrow Agent for validity, execution or their effect upon title, if any.

5. The parties agree to pay Escrow Agent any and all fees incurred pursuant to this Agreement or with respect to the escrowed funds and/or documents.

6. The parties hereto agree to hold Escrow Agent harmless, from and against any and all liabilities, losses, damages, expenses and charges, including but not limited to, attorney’s fees and expenses of litigation, including those necessary to enforce this indemnification paragraph, which may be sustained or incurred by Escrow Agent and its agents under, or arising directly or indirectly out of such any claim, action, proceeding, or judgment arising from the escrowed documents and/or funds. In the event of a dispute between the parties to this Agreement, Escrow Agent shall be permitted in its sole discretion: (a) not to act unless pursuant to an order of a court, or (b) to file a complaint in interpleader and deposit the documents and/or funds with the court, less all out-of-pocket fees and expenses incurred by Escrow Agent, including attorneys’ fees. Upon so acting under 6(a) or (b), Escrow Agent shall be released and forever discharged of all liability under the terms of this Agreement or with respect to the documents and/or funds escrowed.

7. Escrow Agent shall not be personally liable for any act it may do or omit to do hereunder as such agent, while acting in good faith and in the exercise of its own best judgment, and any act done or omitted by it pursuant to the advice of its own attorneys shall be conclusive evidence of such good faith. Escrow Agent shall not be under any duty or obligation to ascertain the identity, authority or rights of the parties executing or delivering or purporting to execute or deliver these instructions or any documents or papers or payments deposited or called for hereunder, and assumes no responsibility or liability for the validity or sufficiency of these instructions or any documents or papers or payments deposited or called for hereunder.

8. The Agreement may be supplemented, altered, amended, modified or revoked by writing only, signed by all of the parties hereto.

Dated effective: January 1, 2024.

Purchaser:

COLORADO RIVER WATER
CONSERVATION DISTRICT, a
political subdivision of the state of Colorado

By: 

Name: Kathy Chandler-Henry

Title: President, Colorado River Water
Conservation District

Escrow Agent:

FIRST AMERICAN TITLE INSURANCE
COMPANY

By: _____

Name: _____

Title: _____

Seller:

PUBLIC SERVICE COMPANY OF
COLORADO, a Colorado corporation

By: 

Name: Robert S. Kenney

Title: President, Public Service Company of
Colorado

EXHIBIT B

PSCo's DUE DILIGENCE DELIVERIES

Pursuant to Section 4.1 of the Agreement, PSCo shall provide any of the following documents in possession of PSCo, its agents, contractors, agents and/or attorneys to the River District within 14 days after the Effective Date of the Agreement:

1. Any and all title work, title opinions, correspondence, court documents related to the existence, title, ownership, conveyance, of title related to the Shoshone Water Rights.
2. Any and all documents related to historical diversion of the Water Rights.
3. Any official correspondence or notices from any and all government officials or agencies related to the diversion, beneficial use, or existence of the Shoshone Water Rights.
4. Any public document or correspondence from third parties related to the diversion, beneficial use or existence of the Shoshone Water Rights and/or the validity of the ability or right of the Shoshone Water Rights to call out junior water rights.
5. Any valuation, appraisal or assessment of the value of the Shoshone Water Rights.

EXHIBIT C

SPECIAL WARRANTY DEED

See attached.

SPECIAL WARRANTY DEED
(Grant of Water Rights)

THIS SPECIAL WARRANTY DEED, dated this ____ day of _____, 202_, is from Public Service Company of Colorado, a Colorado corporation (“Grantor”), whose address is 1800 Larimer Street, Suite 1300, Denver, Colorado 80202, to the Colorado River Water Conservation District (“Grantee”), a political subdivision of the State of Colorado, whose address is 201 Centennial Street, Suite 200, Glenwood Springs, Colorado 81601.

WITNESSETH, that Grantor, for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged does grant, sell, transfer, convey, and assign unto Grantee, its successors, and assigns, all of Grantor’s right, title, and interest in and to the following water rights:

- (a) The water right decreed as the Glenwood Power Canal and Pipe Line water right on December 9, 1907, in Civil Action No. 466, Eagle County District Court, in the amount of 1,250 cubic feet per second with an appropriation date of January 7, 1902, for power, mining, milling, manufacturing, lighting and heating and traction purposes, and as further decreed by the Eagle County District Court on February 27, 1911, in Civil Action No. 553; and
- (b) The water right decreed as the Shoshone Hydro Plant Diversion No. 2 First Enlargement on February 7, 1956 in Civil Action No. 1123, Eagle County District Court, in the amount of 158 cubic feet per second with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy,

TOGETHER with all and singular the hereditaments and appurtenances thereto belonging, or in anywise pertaining, and the reversion and reversions, remainder and remainders, and all the estate, right, interest, claim and demand whatsoever of the Grantor, in law or equity, of, in, and to the above-described water rights. (the “Shoshone Water Rights”).

TO HAVE AND TO HOLD, the Shoshone Water Rights, together with any and all rights incident thereto, forever, and all the estate, right, title and interest of Grantor in the Shoshone Water Rights unto the Grantee. Grantor further represents that it has the authority to convey to Grantee all rights described herein. Grantor, for itself, its successors and assigns, covenants and agrees that it will warrant title and forever defend the Shoshone Water Rights in the quiet and peaceable possession of Grantee, its successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through, or under the Grantor.

[signature page follows]

SPECIAL WARRANTY DEED
(Grant of Water Right)

IN WITNESS WHEREOF, Grantor has executed this Special Warranty Deed on the date set forth above.

GRANTOR

Robert S. Kenney, President
Public Service Company of Colorado

NOTARIZATION

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me on the _____ day of _____ by as President of the Public Service Company of Colorado.

Witness my hand and official seal. My Commission Expires: _____

Notary Public

EXHIBIT D

LEASE OF SHOSHONE WATER RIGHTS

See attached.

WATER LEASE

This WATER LEASE (“Lease”) is entered into this ____ day of _____ (the “**Effective Date**”), by and between the COLORADO RIVER WATER CONSERVATION DISTRICT, a political subdivision of the state of Colorado (“**River District**”), and PUBLIC SERVICE COMPANY OF COLORADO, a Colorado corporation (“**PSCo**”).

RECITALS

WHEREAS, River District owns the following water rights, which were conveyed to it by PSCo pursuant to the Special Warranty Deed dated _____, 202_, and are diverted at the Shoshone Dam, located in Glenwood Canyon, Colorado, and historically used for non-consumptive hydro-power generation at the Shoshone Hydroelectric Generation Station (“**Power Plant**”).

(a) The Power Plant senior water right decreed as the Glenwood Power Canal and Pipeline water right on Dec. 9, 1907, in Civil Action No. 0466, Eagle County District Court, in the amount of 1,250 cfs with an appropriation date of Jan. 7, 1902, for power, mining, milling, manufacturing, lighting and heating and traction purposes, and as further decreed by the Eagle County District Court on Feb. 27, 1911, in Civil Action No. 553; and

(b) The Power Plant junior water right decreed as the Shoshone Hydro Plant Diversion No. 2 on Feb. 7, 1956 in Civil Action No. 1123, Eagle County District Court, in the amount of 158 cfs with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy.

together, (the “**Shoshone Water Rights**”); and

WHEREAS, PSCo desires to lease the Shoshone Water Rights from River District for continued use at the Power Plant for as long as the Power Plant is being operated to produce hydroelectric power; and

WHEREAS, River District is willing to lease the Shoshone Water Rights to PSCo for use at the Power Plant;

NOW THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, River District and PSCo agree as follows.

LEASE

1. Water Rights Lease. River District hereby leases to PSCo, and PSCo hereby leases from the River District, the above-described Shoshone Water Rights for use at the Power Plant for hydroelectric generation purposes.

2. Term of Lease. The term of this Lease begins on the Effective Date and terminates upon permanent abandonment and/or decommissioning by PSCo of Power Plant operations for hydroelectric generation purposes (the “**Term**”). Any temporary suspension of operations at the

Power Plant due to operational considerations, maintenance, replacement, repairs or for other reasons shall not constitute permanent abandonment or decommissioning. Notwithstanding the foregoing, PSCo may terminate this Lease during the Term for any reason by delivering one (1) year's advance written notice to River District. Additionally, refer to Paragraph 12 for provisions relating to termination for cause.

3. Annual Lease Fee. PSCo shall pay to River District annual rent in the amount of ten dollars (\$10.00) (the “**Annual Lease Fee**”) on or before January 15 of each calendar year during the Term. For any Annual Lease Fee payment not already prepaid by PSCo, the River District will provide an invoice of the Annual Lease Fee to PSCo by December 31 of each calendar year prior to the due date of the Annual Lease Fee payment. PSCo may, in its discretion, prepay the Annual Lease Fee for more than one year of the Lease at any point during the Term. River District acknowledges that it has received a payment of \$500.00 from PSCo as of the Effective Date, representing payment of the Annual Lease Fee in advance for fifty (50) years through 20__.

4. Use of Water Rights.

a. PSCo shall use the water delivered pursuant to the Shoshone Water Rights only for power generation purposes at the Power Plant, consistent with the Shoshone Water Rights decrees. PSCo shall not use the Shoshone Water Rights for any other uses or at any other location. PSCo shall take and use the water delivered pursuant to the Shoshone Water Rights to the fullest extent practical, and shall undertake no action that could be construed as abandonment of the Shoshone Water Rights. At times when PSCo is operating the Power Plant, delivery of the Shoshone Water Rights to the Power Plant shall take precedence over any other use of the Shoshone Water Rights.

b. At times when the Power Plant is temporarily not operating or is not fully operating due to maintenance or repair issues, or due to other business considerations, the Shoshone Water Rights may be made available to the Colorado Water Conservation Board pursuant to the terms of the Instream Flow Agreement dated _____, 202__, between the River District, PSCo and the CWCB, and the decree entered in Division 5 Case No. ____CW____. PSCo shall provide advance written notice to River District at least thirty (30) days prior to any scheduled shutdown of Power Plant operations, and shall provide notice as soon as reasonably possible of any unscheduled shutdown of Power Plant operations. Such notice, whether for scheduled or unscheduled shutdown of Power Plant operations shall also provide River District notice of the anticipated amount of time that the Power Plant will be shutdown or partially shutdown.

5. Power Plant Operations. PSCo shall conduct Power Plant operations, including but not limited to replacing, reconstructing, upgrading, adding to, improving, or altering the Power Plant, in its sole discretion, so long as the same does not change the point of diversion, flow rate, and non-consumption of the Shoshone Water Rights through the Power Plant. If PSCo determines to decommission and/or permanently suspend operations of the Power Plant it will provide written notice to River District at least six (6) months before operations at the Power Plant permanently cease and this Lease shall automatically terminate as of the date of completion of decommissioning by PSCo and/or permanent abandonment of the Power Plant.

6. Restriction on Sublease and Assignment. Upon thirty (30) days advanced written notice to the River District, PSCo may assign this Lease only to a successive owner or operator of the Power Plant for power generation purposes. Otherwise PSCo shall not rent, sublet, transfer or convey the right to use the Shoshone Water Rights.

7. No Vested Interest in Shares or Joint Venture. River District grants no interest in the Shoshone Water Rights to PSCo other than as explicitly set forth in this Lease. PSCo shall make no claim to any rights, title, or interest in the Shoshone Water Rights other than as explicitly set forth in this Lease. This Lease does not create a partnership or joint venture of any kind between the parties. River District shall not be entitled to any claim based on revenue generated by PSCo by use of the Shoshone Water Rights at the Power Plant. Likewise, PSCo shall bear the entirety of any loss, cost, or expense incurred through its use of the Shoshone Water Rights at the Power Plant, including but not limited to the cost or expense related to any federal “headwaters benefit” charge. River District shall have no obligation express or implied to maintain, operate and or have any role in the decommissioning of the plant and or repair, replacement or removal of any infrastructure owned and/or operated by PSCo. PSCo hereby indemnifies and holds harmless the River District from any and all obligations, financial or otherwise related to the repair, replacement, removal of infrastructure arising from PSCo’s operation or decommissioning of the Power Plant or its associated infrastructure including but not limited to the current or future Shoshone dam.

8. No Guarantee of Yield. PSCo is entitled to receive the amount of water yielded by the Shoshone Water Rights by operation of the decrees therefore and administration of the same by the Colorado Division of Water Resources. River District makes no warranty, guarantee, or representation of any kind regarding the quality or physical yield of water to be delivered pursuant to the Shoshone Water Rights. PSCo shall not hold River District liable for any failure in delivery of the water pursuant to the Shoshone Water Rights, including, but not limited to, that caused by force of nature or failure of water supply infrastructure, except if such failure is a result of the exercise of the Shoshone Water Rights by the CWCB.

9. Maintenance of Infrastructure and Power Plant. During the Term, PSCo shall be responsible for the maintenance, construction, repair, operation, replacement, reconstruction, inspection, and improvement of:

a. the infrastructure and other personal property necessary to deliver water pursuant to the Shoshone Water Rights at PSCo’s own cost and expense. PSCo shall undertake the foregoing as may be necessary to keep the infrastructure and other personal property in good working condition during the Term of this Lease, as reasonably practicable in PSCo’s discretion.

b. the Power Plant at PSCo’s own cost and expense. PSCo may, in its sole discretion, conduct any of the foregoing at any time during the Term of this Lease so long as the Shoshone Water Rights’ use, and point of diversion remain unchanged by PSCo’s activities.

Any temporary shutdowns, suspensions, or reductions in operation of the Power Plant due to any of the foregoing activities shall not constitute a default pursuant to Paragraph 12 of this Lease.

10. Environmental Indemnity. Except to the extent that the same arise from any use of the Shoshone Water Rights by the River District, or any third party, or the River District's obligations under this Lease, PSCo hereby agrees to indemnify, defend, and hold harmless the River District and its agents, affiliates, officers, directors and employees of and from any and all liability, claims, demands, actions, and causes of action whatsoever (including without limitation reasonable attorneys' fees and expenses, and costs and expenses reasonably incurred in investigating, preparing or defending against any litigation or claim, action, suit, proceeding or demand of any kind or character) arising out of or related to the use of the Shoshone Water Rights in the Power Plant and the (1) alleged contamination by any hazardous substance, pollutant or contaminant, or petroleum or any fraction thereof of the Shoshone Water Rights, or (2) alleged injury or threat of injury to human health or safety or to the environment, or (3) alleged noncompliance with any with any federal, state, and local environmental statutes, regulations, ordinances, and any permits, approvals, or judicial or administrative orders issued thereunder, giving rise to liability under any federal, state or local environmental statutes or ordinances, including without limitation the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq., as amended from time to time, or under any common law claim, including claims for personal injury or property damage or for injunctive relief of any kind.

11. Notice. All notices to be given under this Lease shall be (1) sent by certified or registered mail, return receipt requested, (2) hand-delivered at the addresses set forth below, or (3) by electronic mail requiring confirmation of receipt. Either party shall provide written notice to the other party if the appropriate contact information changes.

| | |
|---------------|---|
| If to PSCo: | Public Service Company of Colorado Attn: Water Resources 1800 Larimer Street, Suite 1300 Denver, CO 80202 |
| With Copy to: | Public Service Company of Colorado Attn: Director, Community Relations 1800 Larimer Street, Suite 1100 Denver, CO 80202 |
| And: | Xcel Energy Attn: Legal Dept. – Real Estate 1800 Larimer Street, 14th Floor Denver, CO 80202 |
| and: | Welborn Sullivan Meck & Tooley, P.C. 1401 Lawrence Street, Suite 1800 Denver, CO 80202 Attn: Carolyn Burr, Esq.; James M. Noble, Esq. cburr@wsmtlaw.com jnoble@wsmtlaw.com |

If to River District: Andy Mueller, Esq.
General Manager
Colorado River Water Conservation District
201 Centennial St., #200
Glenwood Springs, CO 81601
amueller@crwcd.org

With Copy to: Peter Fleming, Esq.
General Counsel
Colorado River Water Conservation District
201 Centennial St., #200
Glenwood Springs, CO 81601
pfleming@crwcd.org

12. Default and Remedies.

a. If either River District or PSCo fails to comply with a term or condition herein, such failure constitutes a default of this Lease. The non-defaulting party may declare the default by providing written notice to the defaulting party in accordance with Paragraph 11 above. Upon receipt of this notice of default, the defaulting party will have thirty (30) days within which to cure the default.

b. If, in the sole discretion of the non-defaulting party, the default has not been cured, a cure has not commenced, or the defaulting-party has ceased to pursue the cure with diligence during such 30-day cure period, or after any written extension thereof mutually agreed upon by the parties, the non-defaulting party may treat the Lease as continuing and the non-defaulting party shall have the right to injunctive relief, specific performance or damages, or both, and to avail itself of any other remedy at law or equity. The failure of either party to declare a default or material breach does not establish a precedent or constitute an implied waiver of any subsequent breach of the terms and conditions in this Lease.

c. In the event either party is unable to perform its obligations under the terms of this Lease because of acts of God, strikes, stoppage of labor, riot, fire, flood, rock or mud slides, acts of war, insurrection, accident, order of any court, equipment or transportation failure or damage reasonably beyond its control, or other causes reasonably beyond its control, such party shall not be liable for damages to the other for any damages resulting from such failure to perform or otherwise from such causes.

d. All of the rights and remedies set forth in this Paragraph 12 shall be cumulative. In any action to enforce or construe the terms of this Lease, the substantially prevailing party shall recover all legal and related court costs, including all reasonable attorneys' fees and expert witness fees, costs and expenses.

13. No Third Party Beneficiaries. Nothing in this Lease, express or implied, is intended to confer any rights or remedies upon any parties other than PSCo and River District, or their respective permissible successors in interest.

14. Recovery of Costs and Fees. In addition to any remedies otherwise available, a party that is successful in a legal action commenced against the other due to a default or material breach of this Lease may recover from the defaulting party reasonable costs and attorneys' fees incurred during the course of such legal action.

15. Governing Law and Venue. This Lease shall be governed by and enforced in accordance with the laws of the State of Colorado. Proper venue for any action arising out of this Lease is the District Court for Garfield County, Colorado, or the Division 5 Water Court for the State of Colorado.

16. Severability. In the event a provision of this Lease is held invalid or unenforceable by a court of competent jurisdiction, such holding will not invalidate any other provision herein, and the remainder of the Lease should be interpreted in accordance with the intent of the parties.

17. Integration. This Lease constitutes a complete integration of the understanding and Lease between River District and PSCo with respect to the subject matter herein. No representations, negotiations, or warranties, express or implied, exist between River District and PSCo except as explicitly set forth in this Lease. This Lease may only be modified in a written form duly authorized, approved, and executed by River District and PSCo.

18. Counterparts. This Lease may be executed in counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument. Executed copies of this Lease may be delivered by electronic means. The parties agree to accept and be bound by signatures hereto delivered by electronic means.

19. Recording. PSCo shall not record this Lease in the real property records of any jurisdiction. This Lease is not intended to run with the land as a covenant burdening real property.

[signature page follows]

IN WITNESS WHEREOF, the undersigned parties have executed this Water Lease on the date first set forth above.

Public Service Company of Colorado, a
Colorado Corporation

Colorado River Water Conservation District,
a political subdivision of the state of Colorado

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____

EXHIBIT E

PROMISSORY NOTE

See attached.

PROMISSORY NOTE

\$20,000,000.00 (Twenty Million Dollars)

_____, 20__

FOR VALUE RECEIVED, the Colorado River Water Conservation District, a political subdivision of the state of Colorado (“**Borrower**”) promises to pay to Public Service Company of Colorado, a Colorado corporation (“**Lender**”) the principal sum of TWENTY MILLION and No/100 DOLLARS (\$20,000,000.00) (the “**Principal Amount**”), with interest on the unpaid balance thereof at the Effective Rate (hereinafter defined) in effect from time to time.

1. All sums owing hereunder are payable in lawful money of the United States of America, in immediately available funds.

2. For the purposes of this promissory note (this “**Note**”), the “**Effective Rate**” shall mean the Secured Overnight Financing Rate in effect on the date of this Note on a per annum basis. The Effective Rate is identified on the payment schedule attached hereto as Schedule 1 (the “**Payment Schedule**”).

3. The outstanding principal balance of this Note, together with all accrued and unpaid interest, shall be due and payable in annual installments calculated based on a 10-year amortization. The annual installment payments shall begin on the April 30, _____ and shall continue to be due on or before the 30th day of each subsequent April until the principal amount is paid in full, and shall be paid to Lender in accordance with the Payment Schedule.

4. Payment by Borrower shall be made to Lender by wire or electronic funds transfer per the instructions provided by Lender, or at such other place as may be designated by written notice to Borrower by Lender.

5. Payments will be applied first to any late fees, then to accrued interest, and the remainder, if any, to the then-outstanding Principal Amount. Any reductions of the Principal Amount may not be re-borrowed.

6. Any remaining Principal Amount, and any accrued interest thereon, that has not been paid in full on or before April 30, 20____ (“**Maturity Date**”) shall be due and payable on the Maturity Date.

7. The River District may prepay the then-outstanding amount of this Note, along with any outstanding interest, at any time without penalty or premium.

8. If any payment required by this Note is not paid when due the indebtedness shall bear interest at the rate of Effective Rate plus 5% per annum until such payment is made. Further, if any payment is not paid within 30 days of its due date, Borrower shall pay Lender a late payment charge of 10% of the amount of such annual payment. Should the Borrower fail to pay any payment due pursuant to this Note within sixty (60) days, Lender shall be entitled to accelerate the entire remaining principal amount then outstanding and all accrued interest and penalties thereon.

9. Nothing in this Note is intended or shall be construed to create a multiple fiscal year financial obligation or debt of the Borrower. Where activities or payment obligations provided in

this Note extend beyond the then-current fiscal year, continued payments, expenditures, or appropriations are contingent on the approval of the Board of Directors of the Borrower.

10. The indebtedness evidenced by this Promissory Note is secured by a Deed of Trust, of even date herewith, and, until released, the Deed of Trust contains additional rights of Lender. Such rights may cause acceleration of the indebtedness evidenced by this Promissory Note. Reference is made to said Deed of Trust for such additional terms. Said Deed of Trust grants rights in certain property located in the County of Garfield, State of Colorado, described as follows (the **“Property”**):

- (a) The Shoshone Power Plant senior water right decreed as the Glenwood Power Canal and Pipeline water right on Dec. 9, 1907, in Civil Action No. 0466, Eagle County District Court, in the amount of 1,250 cfs with an appropriation date of Jan. 7, 1902, for power, mining, milling, manufacturing, lighting and heating and traction purposes, and as further decreed by the Eagle County District Court on Feb. 27, 1911, in Civil Action No. 553; and
- (b) The Shoshone Power Plant junior water right decreed as the Shoshone Hydro Plant Diversion No. 2 on Feb. 7, 1956 in Civil Action No. 1123, Eagle County District Court, in the amount of 158 cfs with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy.

11. Any notice, demand, claim or other written instrument required or permitted to be given pursuant to this Promissory Note shall be in writing signed by the Party giving such notice and shall be sent by electronic mail, hand messenger delivery, overnight courier service or certified mail (receipt requested) to the other Party at the addresses set forth below and shall be deemed to have been duly given by delivery to the respective addresses provided below, or such other address changed by the recipient by notice consistent with this paragraph: (i) on the date and at the time of delivery if delivered personally to the Party to whom notice is given at such address; (ii) on the date and at the time of delivery or refusal of acceptance of delivery if delivered or attempted to be delivered by an overnight courier service to the Party to whom notice is given as such address; (iii) on the date of delivery or attempted delivery shown on the registered or certified mail, return receipt requested, postage prepaid and properly addressed to such address; (iv) if an email address is specified, on the date and at the time shown on the sent email message if sent to the e-mail address specified below:

| | |
|---------------|---|
| If to Lender: | Public Service Company of Colorado 1800 Larimer Street, Suite 1100 Denver, CO 80202 Attn: Director, Environmental Services |
|---------------|---|

| | |
|-----------------|--|
| with a copy to: | Frances A. Folin, Esq. Xcel Energy Services Inc. 1800 Larimer Street, 14th Floor Denver, CO 80202 303-294-2222 Frances.A.Folin@xcelenergy.com |
|-----------------|--|

and: Welborn, Sullivan, Meck & Tooley, P.C.
1401 Lawrence Street, Suite 1800
Denver, Colorado 80202
Attn: Carolyn Burr, Esq., James M. Noble, Esq.
(303) 830-2500
cburr@wsmtlaw.com, jnoble@wsmtlaw.com

If to Borrower: Andy Mueller, Esq.
General Manager
Colorado River Water Conservation District
201 Centennial St., #200
Glenwood Springs, CO 81601
970-945-8522
amueller@crwcd.org

with a copy to: Peter Fleming, Esq.
General Counsel
Colorado River Water Conservation District
201 Centennial St., #200
Glenwood Springs, CO 81601
970-945-8522
pfleming@crwcd.org

12. A waiver of any term of this Note or the Deed of Trust or of any of the obligations secured thereby must be made in writing and shall be limited to the express written terms of such waiver. In the event of any inconsistencies between the terms of this Note and the terms of any other document related to the loan evidenced by this Note, the terms of this Note shall prevail.

13. This Note shall be construed and enforced in accordance with the laws of the State of Colorado.

14. The provisions of this Note may be amended or revised only by an instrument in writing signed by the Borrower and Lender.

BORROWER:

Colorado River Water Conservation District,
a political subdivision of the State of Colorado

By: _____

Schedule 1
(Payment Schedule)

[insert amortization/payment schedule prior to closing]

EXHIBIT F

DEED OF TRUST

See attached.

Following recording return to:
Public Service Company of Colorado
c/o Xcel Energy
Attn: Legal Dept. – Real Estate
1800 Larimer Street, 14th Floor
Denver, Colorado 80202

DEED OF TRUST

THIS DEED OF TRUST is made this _____ day of _____, 20____, by the COLORADO RIVER WATER CONSERVATION DISTRICT, a political subdivision of the State of Colorado (“Trustor”), whose address is 201 Centennial Street, Suite 200, Glenwood Springs, Colorado 81601, in favor of the PUBLIC TRUSTEE OF GARFIELD COUNTY, COLORADO (“Trustee”), for the benefit of PUBLIC SERVICE COMPANY OF COLORADO, a Colorado corporation (“Beneficiary”), whose address is 1800 Larimer Street, Suite 1100, Denver, Colorado 80202.

1. **Property in Trust.** Trustor, in consideration of the indebtedness herein recited and the trust herein created, hereby grants and conveys to Trustee, for the benefit of Beneficiary, in trust, with power of sale, all of Trustor’s right, title, and interest in the following legally described property located in the COUNTY OF GARFIELD, STATE OF COLORADO (the “Property”):

- (a) The Shoshone Power Plant senior water right decreed as the Glenwood Power Canal and Pipeline water right on Dec. 9, 1907, in Civil Action No. 0466, Eagle County District Court, in the amount of 1,250 cfs with an appropriation date of Jan. 7, 1902, for power, mining, milling, manufacturing, lighting and heating and traction purposes, and as further decreed by the Eagle County District Court on Feb. 27, 1911, in Civil Action No. 553; and
- (b) The Shoshone Power Plant junior water right decreed as the Shoshone Hydro Plant Diversion No. 2 on Feb. 7, 1956, in Civil Action No. 1123, Eagle County District Court, in the amount of 158 cfs with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy.

2. **Note; Obligations Secured.** This Deed of Trust is given to secure to Beneficiary:

- (a) the repayment of the indebtedness evidenced by Trustor’s promissory note (“Note”), dated as of _____, in the principal sum of TWENTY MILLION and 00/100 DOLLARS (U.S. \$20,000,000.00), with interest as specified in the Note;
- (b) the payment of all other sums as specified in the Note disbursed by Beneficiary in accordance with this Deed of Trust to protect the security of this Deed of Trust; and
- (c) the performance of the covenants and agreements of Trustor herein contained.

If not sooner paid, the entire principal amount outstanding and accrued interest thereon shall be due and payable on _____.

3. **Title.** Trustor covenants that Trustor has taken no action to alienate and/or convey the title to the Property received from Beneficiary via Special Warranty deed dated the same date as this Deed of Trust.
4. **Payment of Principal and Interest.** Trustor shall promptly pay when due the principal of and interest on the indebtedness evidenced by the Note, and any late charges or other charges as provided in the Note, and shall perform all of Trustor's other covenants contained in the Note.
5. **Application of Payments.** All payments received by Beneficiary under the terms hereof shall be applied by Beneficiary first in payment of amounts due pursuant to §8 (Protection of Beneficiary's Security), and the balance in accordance with the terms and conditions of the Note.
6. **Prior Mortgages and Deeds of Trust; Charges; Liens.** Trustor represents and warrants that there are no prior deeds of trust, charges or liens on the Property.
7. **Preservation and Maintenance of Property.** Trustor shall not commit waste or permit impairment or deterioration of the Property and shall comply with the provisions of any lease if this Deed of Trust is on a leasehold. Trustor shall perform all of Trustor's obligations under any declarations, covenants, by-laws, rules, court decrees, or other documents governing the use or ownership of the Property.
8. **Protection of Beneficiary's Security.** If Trustor fails to perform the covenants and agreements contained in this Deed of Trust, or if a default occurs in a prior lien, or if any action or proceeding is commenced which materially affects Beneficiary's interest in the Property, then Beneficiary, at Beneficiary's option, with notice to Trustor if required by law, may make such appearances, disburse such sums, and take such action as is necessary to protect Beneficiary's interest, including, but not limited to:
 - (a) any general or special taxes or ditch or water assessments levied or accruing against the Property;
 - (b) the premiums on any insurance necessary to protect any improvements comprising a part of the Property;
 - (c) sums due on any prior lien or encumbrance on the Property;
 - (d) if the Property is a leasehold or is subject to a lease, all sums due under such lease;
 - (e) the reasonable costs and expenses of defending, protecting, and maintaining the Property and Beneficiary's interest in the Property, including repair and maintenance costs and expenses, costs and expenses of protecting and securing the Property, receiver's fees and expenses, inspection fees, appraisal fees, court costs, attorney fees and costs, and fees and costs of an attorney in the employment of Beneficiary or holder of the certificate of purchase;
 - (f) all other costs and expenses allowable by the evidence of debt or this Deed of Trust; and

- (g) such other costs and expenses which may be authorized by a court of competent jurisdiction.

Trustor hereby assigns to Beneficiary any right Trustor may have by reason of any prior encumbrance on the Property or by law or otherwise to cure any default under said prior encumbrance.

Any amounts disbursed by Beneficiary pursuant to this §8, with interest thereon, shall become additional indebtedness of Trustor secured by this Deed of Trust. Such amounts shall be payable upon notice from Beneficiary to Trustor requesting payment thereof, and Beneficiary may bring suit to collect any amounts so disbursed plus interest specified in the Note. Nothing contained in this §8 shall require Beneficiary to incur any expense or take any action hereunder.

9. **Condemnation.** The proceeds of any award or claim for damages, direct or consequential, in connection with any condemnation or other taking of the Property, or part thereof, or for conveyance in lieu of condemnation, are hereby assigned and shall be paid to Beneficiary as herein provided. In the event of a total taking of the Property, the proceeds shall be applied to the sums secured by this Deed of Trust, with the excess, if any, paid to Trustor.

In the event of a partial taking of the Property, the proceeds remaining after taking out any part of the award due any prior lien holder (net award) shall be divided between Beneficiary and Trustor, in the same ratio as the amount of the sums secured by this Deed of Trust immediately prior to the date of taking bears to Trustor's equity in the Property immediately prior to the date of taking. Trustor's equity in the Property means the fair market value of the Property less the amount of sums secured by both this Deed of Trust and all prior liens (except taxes) that are to receive any of the award, all at the value immediately prior to the date of taking.

If the Property is abandoned by Trustor or if, after notice by Beneficiary to Trustor that the condemnor offers to make an award or settle a claim for damages, Trustor fails to respond to Beneficiary within 30 days after the date such notice is given, Beneficiary is authorized to collect and apply the proceeds, at Beneficiary's option, either to restoration or repair of the Property or to the sums secured by this Deed of Trust.

Any such application of proceeds to principal shall not extend or postpone the due date of the installments referred to in §4 (Payment of Principal and Interest) nor change the amount of such installments.

10. **Trustor not Released.** Extension of the time for payment or modification of amortization of the sums secured by this Deed of Trust granted by Beneficiary to any successor in interest of Trustor shall not operate to release, in any manner, the liability of the original Trustor, nor Trustor's successors in interest, from the original terms of this Deed of Trust. Beneficiary shall not be required to commence proceedings against such successor or refuse to extend time for payment or otherwise modify amortization of the sums secured by this Deed of Trust by reason of any demand made by the original Trustor nor Trustor's successors in interest.

11. **Forbearance by Beneficiary Not a Waiver.** Any forbearance by Beneficiary in exercising any right or remedy hereunder, or otherwise afforded by law, shall not be a waiver or preclude the exercise of any such right or remedy.

12. **Remedies Cumulative.** Each remedy provided in the Note and this Deed of Trust is distinct from and cumulative to all other rights or remedies under the Note and this Deed of Trust or afforded by law or equity, and may be exercised concurrently, independently or successively.

13. **Successors and Assigns Bound; Joint and Several Liability; Captions.** The covenants and agreements herein contained shall bind, and the rights hereunder shall inure to, the respective successors and assigns of Beneficiary and Trustor, subject to the provisions of §21 (Transfer of the Property; Assumption). All covenants and agreements of Trustor shall be joint and several. The captions and headings of the sections in this Deed of Trust are for convenience only and are not to be used to interpret or define the provisions hereof.

14. **Notice.** Except for any notice required by law to be given in another manner, (a) any notice to Trustor provided for in this Deed of Trust shall be in writing and shall be given and be effective upon (1) delivery to Trustor or (2) mailing such notice by first class U.S. mail, addressed to Trustor at Trustor's address stated herein or at such other address as Trustor may designate by notice to Beneficiary as provided herein, and (b) any notice to Beneficiary shall be in writing and shall be given and be effective upon (1) delivery to Beneficiary or (2) mailing such notice by first class U.S. mail, to Beneficiary's address stated herein or to such other address as Beneficiary may designate by notice to Trustor as provided herein. Any notice provided for in this Deed of Trust shall be deemed to have been given to Trustor or Beneficiary when given in any manner designated herein.

15. **Governing Law; Severability.** The Note and this Deed of Trust shall be governed by the laws of the State of Colorado. In the event that any provision or clause of this Deed of Trust or the Note conflicts with the law, such conflict shall not affect other provisions of this Deed of Trust or the Note which can be given effect without the conflicting provision, and to this end the provisions of the Deed of Trust and Note are declared to be severable.

16. **Acceleration; Foreclosure; Other Remedies.** Except as provided in §21 (Transfer of the Property; Assumption), upon Trustor's breach of any covenant or agreement of Trustor in this Deed of Trust, at Beneficiary's option, all of the sums secured by this Deed of Trust shall be immediately due and payable (Acceleration). To exercise this option, Beneficiary may invoke the power of sale, may commence and maintain an action to foreclose this instrument and in such event Borrower specifically waives the defense of laches and any applicable statutes of limitation, and/or may exercise any other remedies permitted by law. Beneficiary shall be entitled to collect all reasonable costs and expenses incurred in pursuing the remedies provided in this Deed of Trust, including, but not limited to, reasonable attorney's fees.

If Beneficiary invokes the power of sale, Beneficiary shall give written notice to Trustee of such election. Trustee shall give such notice to Trustor of Trustor's rights as is provided by law. Trustee shall record a copy of such notice and shall cause publication of the legal notice as required by law in a newspaper of general circulation in each county in which the Property is situated, and shall

mail copies of such notice of sale to Trustor and other persons as prescribed by law. After the lapse of such time as may be required by law, Trustee, without demand on Trustor, shall sell the Property at public auction to the highest bidder for cash at the time and place (which may be on the Property or any part thereof as permitted by law) in one or more parcels as Trustee may think best and in such order as Trustee may determine. Beneficiary or Beneficiary's designee may purchase the Property at any sale. It shall not be obligatory upon the purchaser at any such sale to see to the application of the purchase money.

Trustee shall apply the proceeds of the sale in the following order: (a) to all reasonable costs and expenses of the sale, including, but not limited to, reasonable Trustee's and attorney's fees and costs of title evidence; (b) to all sums secured by this Deed of Trust; and (c) the excess, if any, to the person or persons legally entitled thereto.

17. **Trustor's Right to Cure Default.** Whenever foreclosure is commenced for nonpayment of any sums due hereunder, the owners of the Property or parties liable hereon shall be entitled to cure said defaults by paying all delinquent principal and interest payments due as of the date of cure, costs, expenses, late charges, attorney's fees and other fees all in the manner provided by law. Upon such payment, this Deed of Trust and the obligations secured hereby shall remain in full force and effect as though no Acceleration had occurred, and the foreclosure proceedings shall be discontinued.

18. **Appointment of Receiver; Beneficiary in Possession.** Beneficiary or the holder of the Trustee's certificate of purchase shall be entitled to a receiver for the Property after Acceleration under §16 (Acceleration; Foreclosure; Other Remedies), and shall also be so entitled during the time covered by foreclosure proceedings and the period of redemption, if any; and shall be entitled thereto as a matter of right without regard to the solvency or insolvency of Trustor or of the then owner of the Property, and without regard to the value thereof. Such receiver may be appointed by any Court of competent jurisdiction upon ex parte application and without notice; notice being hereby expressly waived.

Upon Acceleration under §16 (Acceleration; Foreclosure; Other Remedies) or abandonment of the Property, Beneficiary, in person, by agent or by judicially-appointed receiver, shall be entitled to enter upon, take possession of and manage the Property and to collect the rents of the Property including those past due. All rents collected by Beneficiary or the receiver shall be applied, first to payment of the costs of preservation and management of the Property, second to payments due upon prior liens, and then to the sums secured by this Deed of Trust. Beneficiary and the receiver shall be liable to account only for those rents actually received.

19. **Release.** Upon payment of all sums secured by this Deed of Trust, Beneficiary shall cause Trustee to release this Deed of Trust and shall produce for Trustee the Note. Trustor shall pay all costs of recordation and shall pay the statutory Trustee's fees. If Beneficiary shall not produce the Note as aforesaid, then Beneficiary, upon notice in accordance with §14 (Notice) from Trustor to Beneficiary, shall obtain, at Beneficiary's expense, and file any lost instrument bond required by Trustee or pay the cost thereof to affect the release of this Deed of Trust.

20. **Waiver of Exemptions.** Trustor hereby waives all right of homestead and any other exemption in the Property under state or federal law presently existing or hereafter enacted.

21. **Transfer of the Property; Assumption.** The following events shall be referred to herein as a “Transfer”: (i) a transfer or conveyance of title (or any portion thereof, legal or equitable) of the Property (or any part thereof or interest therein); (ii) the execution of a contract or agreement creating a right to title (or any portion thereof, legal or equitable) in the Property (or any part thereof or interest therein); (iii) or an agreement granting a possessory right in the Property (or any portion thereof), in excess of 3 years; (iv) a sale or transfer of, or the execution of a contract or agreement creating a right to acquire or receive, more than fifty percent (50%) of the controlling interest or more than fifty percent (50%) of the beneficial interest in Trustor and (v) the reorganization, liquidation or dissolution of Trustor. Not to be included as a Transfer are the creation of a lien or encumbrance subordinate to this Deed of Trust, or an agreement with, or transfer to, the Colorado Water Conservation Board regarding the use of the Property for instream flow purposes.

At the election of Beneficiary, in the event of each and every Transfer:

- (a) All sums secured by this Deed of Trust shall become immediately due and payable (Acceleration).
- (b) If a Transfer occurs and should Beneficiary not exercise Beneficiary’s option pursuant to this §21 to Accelerate, Transferee shall be deemed to have assumed all of the obligations of Trustor under this Deed of Trust including all sums secured hereby whether or not the instrument evidencing such conveyance, contract or grant expressly so provides. This covenant shall run with the Property and remain in full force and effect until said sums are paid in full. Beneficiary may without notice to Trustor deal with Transferee in the same manner as with Trustor with reference to said sums including the payment or credit to Transferee of undisbursed reserve Funds on payment in full of said sums, without in any way altering or discharging Trustor’s liability hereunder for the obligations hereby secured.
- (c) Should Beneficiary not elect to Accelerate upon the occurrence of such Transfer then, subject to §21(b) above, the mere fact of a lapse of time or the acceptance of payment subsequent to any of such events, whether or not Beneficiary had actual or constructive notice of such Transfer, shall not be deemed a waiver of Beneficiary’s right to make such election nor shall Beneficiary be estopped therefrom by virtue thereof. The issuance on behalf of Beneficiary of a routine statement showing the status of the loan, whether or not Beneficiary had actual or constructive notice of such Transfer, shall not be a waiver or estoppel of Beneficiary’s said rights.

22. **Trustor’s Copy.** Trustor acknowledges receipt of a copy of the Note and this Deed of Trust.

[signature page follows]

EXECUTED BY TRUSTOR as of the date first stated above:

TRUSTOR:

COLORADO RIVER WATER CONSERVATION DISTRICT,
a political subdivision of the State of Colorado

By: _____
Andrew A. Mueller, Secretary/General Manager

By: _____
Kathy Chandler-Henry, CRWCD Board President

STATE OF COLORADO)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 20____, by Andrew A. Mueller, Secretary/General Manager, and Kathy Chandler-Henry, Board President of the Colorado River Water Conservation District, a political subdivision of the State of Colorado.

Witness my hand and official seal.

My commission expires: _____

Notary Public

DISTRICT COURT, WATER DIVISION 5, COLORADO
Garfield County Courthouse
109 8th Street, Suite 104
Glenwood Springs, CO 81601
(970) 947-3861

CONCERNING THE APPLICATION FOR WATER RIGHTS OF THE
COLORADO WATER CONSERVATION BOARD, PUBLIC SERVICE
COMPANY OF COLORADO, and THE COLORADO RIVER WATER
CONSERVATION DISTRICT.

In GARFIELD AND EAGLE COUNTIES, COLORADO.

Attorney for Colorado Water Conservation Board:

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JENNIFER L. MELE, Reg. No. 30720*
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Attorneys for Colorado River Water Conservation District:

Names: Peter C. Fleming, Reg. No. 20805
Jason V. Turner, Reg. No. 35665
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bwalters@crwcd.org

▲ COURT USE ONLY ▲

Case Number:

Div.: Ctrm:

APPLICATION FOR CHANGE OF WATER RIGHTS

Application for Change of Water Rights

Case No. 25CW_____ in Garfield and Eagle Counties, Colorado
District Court, Water Division No. 5, Colorado
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1. Names, mailing addresses, e-mail addresses, and telephone numbers of Co-Applicants.

Colorado Water Conservation Board (the “CWCB”)
Attn: Director
1313 Sherman Street, Room 721
Denver, Colorado 80203
(303) 866-3441

Public Service Company of Colorado, a Colorado Corporation (“PSCo”)
Jeff West, Senior Director, Environmental Services
3500 Blake Street, CO1453-03-MCB
Denver, CO 80205
(303) 571-2762

Colorado River Water Conservation District (the “River District”)
Attn: Secretary/General Manager
201 Centennial Street, Suite 200
Glenwood Springs, CO 81601
(970) 945-8522

The above-listed parties shall be collectively referred to herein as “Co-Applicants.”

Please send all copies of pleadings and correspondence to:

Jennifer L. Mele, Esq.
Natural Resources and Environment Section
Colorado Department of Law
1300 Broadway, 10th Floor
Denver, Colorado 80203
(Attorney for CWCB)

Carolyn F. Burr, Esq.
Jim M. Noble, Esq.
WELBORN SULLIVAN MECK & TOOLEY, P.C.
1401 Lawrence Street, Suite 1800
Denver, Colorado 80202
(Attorneys for PSCo)

Peter C. Fleming, Esq.
Jason V. Turner, Esq.
Bruce C. Walters, Esq.
201 Centennial Street, Suite 200
Glenwood Springs, CO 81601
(Attorneys for River District)

Application for Change of Water Rights

Case No. 25CW_____ in Garfield and Eagle Counties, Colorado
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1. Summary of Application.

The CWCB is an agency of the State of Colorado created to aid in the protection and development of the waters of the state for the benefit of its present and future inhabitants. Pursuant to section 37-92-102(3), C.R.S., the CWCB is authorized to acquire, by grant, purchase, donation, lease, or other contractual agreement, such water, water rights, and interests in water that are not on the abandonment list in such amount as the CWCB determines is appropriate for stream flows to preserve and/or improve the natural environment to a reasonable degree. The River District is a political subdivision of the State of Colorado charged with, among other duties, promoting the health and general welfare of the inhabitants of the River District by the conservation, use, and development of the water resources of the Colorado River and its principal tributaries. *See* §§ 37-46-101, C.R.S., *et seq.* PSCo is a Colorado corporation and is the owner and operator of the Shoshone hydroelectric power plant (“Shoshone Power Plant”) located on the mainstem of the Colorado River in Glenwood Canyon, approximately six miles upstream of the City of Glenwood Springs.

The Shoshone Power Plant produces hydroelectric energy by means of PSCo’s diversion of the Shoshone Water Rights, which are more particularly described in paragraph 2 below. Pursuant to the January 1, 2024 Purchase and Sale Agreement between the River District and PSCo (the “PSA”), the River District is the contract purchaser of the Shoshone Water Rights. The “PSA” (including all exhibits) is attached and incorporated hereto as **Exhibit 1.**

At its bi-monthly meeting on September ____, 2025, the CWCB determined that acquiring from the River District the exclusive right to use the Shoshone Water Rights for instream flow purposes in the reach of the Colorado River described in paragraph 3.2., below, is appropriate to preserve and improve the natural environment to a reasonable degree pursuant to section 37-92-102(3), C.R.S. Co-Applicants entered into a Water Rights Dedication and Instream Flow Agreement with the CWCB on September ____, 2025 (the “ISF Agreement,” attached and incorporated hereto as **Exhibit 2.**). The ISF Agreement grants to the CWCB the exclusive right to use the Shoshone Water Rights to preserve and improve the natural environment within the approximately 2.4 mile-reach of the Colorado River that extends between the Shoshone Diversion Dam and the Shoshone Power Plant’s discharge outlets (the “Shoshone Reach”). The PSA provides that PSCo, or its successors and assigns is entitled to a leasehold interest in the Shoshone Water Rights for continued use of those rights for hydropower generation at the Shoshone Power Plant so long as the plant is operating.

By this Application, Co-Applicants seek to add instream flow use by the CWCB to the decreed uses of the Shoshone Water Rights. The change of water rights decree shall confirm that water attributable to the historical exercise of the Shoshone Water Rights for hydropower generation will remain in the stream to preserve and improve the natural environment to a reasonable degree within the Shoshone Reach up to the full decreed rate of the Shoshone Water Rights of available “Natural Flow”. For the purposes of this Application, the “Natural Flow” is the amount of water in the Colorado River measured at the streamflow gauge (USGS 09070500) on

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the Colorado River near Dotsero, Colorado, located in Eagle County (the “Dotsero Gage”), including the amount of water usable by the Shoshone Water Rights when those water rights are in priority, except that the “Natural Flow” does not include any water released from storage and conducted into the Colorado River upstream of the Dotsero Gage (accounting for evaporation and transit loss), which water is intended for delivery for use downstream of the discharge outlets for the Shoshone Power Plant.

2. Decreed water rights for which change is sought and structures associated with the decreed water rights.

2.1. Glenwood Power Canal and Pipeline (“Senior Shoshone Water Right”).

2.1.1. Previous Decrees. Civil Action No. 466, Eagle County District Court, decreed December 9, 1907, for a conditional water right, which was made absolute on February 27, 1911, in Civil Action No. 553.

2.1.2. Decreed Point of Diversion. The Shoshone Diversion Dam and Tunnel (“Point of Diversion”) located on the right bank, being the northerly bank, of the Colorado River whence the North quarter corner of Section Thirty (30), Township Five (5) South, Range Eighty-Seven (87) West of the 6th Principal Meridian bears North 23° 48’20” East 2,414.64 feet, in Garfield County, Colorado.

2.1.3. Source. Colorado River.

2.1.4. Appropriation Date: January 7, 1902.

2.1.5. Decreed Uses. Power, mining, milling, manufacturing, lighting, heating, and traction purposes.

2.1.6. Amount. 1,250 cubic feet per second (“c.f.s.”).

2.2. Shoshone Hydro Plant Diversion No. 2 (“Junior Shoshone Water Right”).¹

2.2.1. Previous Decrees. Civil Action No. 1123, Eagle County District Court, decreed absolute on February 7, 1956.

2.2.2. Decreed Point of Diversion. See ¶ 2.1.2. above.

2.2.3. Source. Colorado River.

2.2.4. Appropriation Date. May 15, 1929.

¹ The Senior Shoshone Water Right and Junior Shoshone Water Right are collectively referred to herein as the “Shoshone Water Rights” for a total combined rate of 1,408 c.f.s.

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2.2.5. Decreed Uses. Manufacturing and generation of electrical energy.

2.2.6. Amount. 158 c.f.s.

2.3. Priorities, appropriation dates, total decreed amounts and rates of flow, and amounts Co-Applicants intend to change.

2.3.1. Co-Applicants seek to continue to use the full 1,408 c.f.s. decreed to the combined Shoshone Water Rights for the changed use for instream flow purposes, subject to terms and conditions preventing injury to other decreed water rights.

| Shoshone Water Rights (all amounts are absolute and are in c.f.s.) | | | |
|--|--------------------|-------------------|---|
| Priority Date | Appropriation Date | Adjudication Date | Total Decreed Rate of Diversion and Diversion Rate Co-Applicants Intend to Change |
| December 5, 1905 | January 7, 1902 | December 9, 1907 | 1,250 c.f.s. |
| May 31, 1940 | May 15, 1929 | February 7, 1956 | 158 c.f.s. |
| TOTAL | | | 1,408 c.f.s. |

3. Detailed Description of Proposed Change of Water Right.

3.1. Addition of Instream Flow Use. In addition to the existing decreed hydropower generation use, Co-Applicants seek water court approval to add instream flow use of the Shoshone Water Rights exclusively by the CWCB pursuant to section 37-92-102(3), C.R.S., and the terms of the ISF Agreement (**Exhibit 2**), to preserve and improve the natural environment of the Shoshone Reach to a reasonable degree at flow rates up to 1,408 c.f.s. of Natural Flow, under their individual priorities, as measured and administered at the Dotsero Gage. Co-Applicants intend for the CWCB to use the Shoshone Water Rights for instream flow purposes to the extent that the Shoshone Water Rights are not being used by PSCo for hydropower generation at the Shoshone Power Plant. Subject to the terms and conditions of the ISF Agreement and the change of water rights decree requested herein, the CWCB shall exercise the Shoshone Water Rights for instream flow purposes to the extent that the water rights are not being exercised by PSCo for hydropower generation at the Shoshone Power Plant.

3.2. Shoshone Reach. The CWCB's instream flow use will occur in the following stream reach of the Colorado River ("the Shoshone Reach"), which is approximately 2.4 miles in length between the upstream and downstream termini. The Shoshone Reach is more particularly described below and is depicted on **Exhibit 3** attached hereto.

3.2.1. Upstream Terminus – Shoshone Power Plant Diversion Dam and Tunnel.

3.2.1.1. On the right bank, being the northerly bank, of the Colorado River whence the North quarter corner of Section Thirty (30), Township Five (5) South, Range Eighty-Seven (87) West of the 6th Principal Meridian bears North 23° 48'20" East 2,414.64 feet, in Garfield County, Colorado.

3.2.1.2. UTM Zone 13 NAD83; Easting: _____; Northing _____.

3.2.2. Downstream Terminus – Shoshone Power Plant Discharge Outlets.

3.2.2.1. On the right bank, being the northerly bank, of the Colorado River whence the Southeast corner of Section Thirty-five (35), Township Five (5) South, Range Eighty-Eight (88) West of the 6th Principal Meridian bears South 29° 24' 14" East, 1,771 feet, in Garfield County, Colorado.

3.2.2.2. UTM Zone 13 NAD83; Easting: _____; Northing _____.

3.2.3. Maximum Rate of Flow. The maximum rate of flow for the instream flow use of the Shoshone Water Rights will be their combined decreed rate of 1,408 c.f.s. of Natural Flow, under their individual priorities, for the purpose of preserving and improving the natural environment of the Shoshone Reach to a reasonable degree, subject to the terms and conditions of the change of water rights decree requested herein.

4. Quantification of Historical Exercise of the Shoshone Water Rights.

Co-Applicants will determine the historical use of the Shoshone Water Rights over a representative study period that includes wet years, dry years, and average years.

4.1. Historical Use.

4.1.1. The Shoshone Water Rights have been historically administered by the State Engineer and the Division Engineer for Water Division No. 5 (the "Engineers") at the Dotsero Gage, located approximately 8.5 miles upstream of the Shoshone Diversion Dam. The Shoshone Water Rights have historically been diverted by PSCo at the Shoshone Diversion Dam, as described in paragraph 3.2.1. above. The historical use of water attributable to the Shoshone Water Rights has been non-consumptive. The water historically diverted at the Shoshone Diversion Dam and run through the Shoshone Tunnel for delivery to the plant turbines was returned to the Colorado River at the outfall (i.e., discharge outlets) of the Shoshone Power Plant approximately 2.4 miles downstream of the Point of Diversion. See **Exhibit 3**. Notwithstanding the foregoing, the practice of diverting water attributable to the Shoshone Water Rights from the Colorado River and

Application for Change of Water Rights

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into the Shoshone Tunnel for delivery to the Shoshone Power Plant means that the historical exercise of the Shoshone Water Rights has been depletive to the Shoshone Reach before the diversions are returned to the Colorado River at the Shoshone Power Plant Discharge Outlets (i.e., the Downstream Terminus described in ¶ 3.2.2. above).

4.1.2. []

4.1.3. []

5. Maintenance of Historical Return Flows.

5.1. Co-Applicants will maintain historical return flows by ensuring that any future use of the Shoshone Water Rights is consistent with the historical exercise of the Shoshone Water Rights, so that water will continue to be available in the stream at the same time, location, and amount at the Downstream Terminus. This maintenance of the historical return flow pattern will prevent injury to downstream water rights. Upon entry of the change of water rights decree requested herein, Co-Applicants shall maintain the return flows that historically accrued to the Colorado River at the location of the Downstream Terminus.

6. Name(s) and address(es) of owners of land on which structures are located.

6.1. _____.

WHEREFORE, the CWCB, PSCo, and the River District request the Water Court to award a change of water rights decree for the Shoshone Water Rights to confirm the addition of instream flow use by the CWCB, pursuant to section 37-92-102(3), C.R.S., to preserve and improve the natural environment to a reasonable degree in the Shoshone Reach, in the amounts and up to the full decreed 1,408 c.f.s. of Natural Flow, as set forth in this application.

Respectfully submitted this ____ day of _____, 2025.

Application for Change of Water Rights

Case No. 25CW_____ in Garfield and Eagle Counties, Colorado

District Court, Water Division No. 5, Colorado

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CRD-05
Draft Application for
Change of Water Rights
[CWCB ISF HEARING]

COLORADO RIVER WATER CONSERVATION
DISTRICT

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Application for Change of Water Rights

Case No. 25CW_____ in Garfield and Eagle Counties, Colorado

District Court, Water Division No. 5, Colorado

Page **9** of **9**

VERIFICATION

I, _____, state that I have read the foregoing Application for Change of Water Rights and verify its content. I declare under penalty of perjury under the laws of the State of Colorado that the foregoing is true and correct.

Printed Name

Signature

PRELIMINARY DRAFT



COLORADO
Parks and Wildlife
Department of Natural Resources

Enclosure D1
Agenda Item 10.d
CWCB Board Meeting
May 21-22, 2025

CRD-06
May 6, 2025, CPW Recommendation on the
Proposed Acquisition of an Interest in the
Shoshone Hydroelectric Power Plant Water Rights
[CWCB ISF HEARING]

May 6, 2025

Director Lauren Ris
Colorado Water Conservation Board
1313 Sherman Street, 7th Floor
Denver, CO 80203

Subject: Colorado Parks and Wildlife Recommendation on the Proposed Acquisition of an Interest in the Shoshone Hydroelectric Power Plant Water Rights

Dear Ms. Ris,

Colorado Parks and Wildlife (CPW) offers the following evaluation of the proposed instream flow (ISF) acquisition of water rights associated with the Shoshone Hydroelectric Power Plant, which are currently owned and operated by Public Service Company (PSCo), a subsidiary of Xcel Energy. The Colorado River District (CRD) is in the process of acquiring the Shoshone water rights and has proposed adding ISF as a beneficial use and making that water available to the Colorado Water Conservation Board (CWCB or Board) for the benefit of the aquatic ecosystem in the Colorado River. The CWCB will review this proposal and may accept an interest in the water rights through a two-board meeting administrative approval process, currently scheduled to commence in May. As required under CWCB's Instream Flow and Natural Lake Level Program Rules, CWCB has requested that CPW evaluate the aquatic benefits and provide recommendations on the proposed acquisition. CPW's perspective is offered under the mandate of our mission to perpetuate the wildlife resources of the state and provide enjoyable and sustainable outdoor recreation opportunities that educate and inspire current and future generations to serve as active stewards of Colorado's natural resources.

The Shoshone water rights include a 1250 cfs senior right with a 1905 priority date and a 158 cfs junior right with a 1940 priority date for a total decreed flow rate of 1408 cfs. The CRD is in the process of acquiring the Shoshone water rights from PSCo under procedures described in their Purchase and Sales Agreement executed in December 2023. If the CWCB votes to approve the acquisition by accepting an interest in the water rights, PSCo, CRD, and the CWCB will file a joint water court application to add ISF as a decreed beneficial use to the Shoshone water rights. Once a decree is obtained, the Shoshone water rights can be dedicated to CWCB to exercise ISF use

Jeff Davis, Director, Colorado Parks and Wildlife
Parks and Wildlife Commission: Dallas May, Chair · Richard Reading, Vice-Chair · Karen Bailey, Secretary · Jessica Beaulieu
Marie Haskett · Tai Jacober · Jack Murphy · Gabriel Otero · Murphy Robinson · James Jay Tutchton · Eden Vardy



when the rights are not used to generate hydropower. Furthermore, should the power plant be decommissioned, ISF use will become the sole beneficial use for the water rights. The reach defined for ISF use extends from the point of diversion for the hydroelectric plant at the Shoshone Dam approximately 2.4 miles downstream to the outfall of the power plant discharge outlets. This reach, referred to as the Shoshone Reach, will benefit from a donation of the full water right (up to 1408 cfs) when in priority and as dictated by the water court change case.

The Shoshone water rights have a significant influence on administration of the Colorado River due to their seniority, magnitude, and location. An administrative call of the Shoshone water rights has historically served as an important legal mechanism for water right curtailment on the upper Colorado River mainstem and its tributaries, with broad implications for flow management throughout the Upper Colorado River watershed. Given the age of the power plant and operational challenges, permanent preservation of the Shoshone water rights has been contemplated for decades and prioritized in numerous planning efforts. As entirely non-consumptive water rights, partnering with the CWCB to utilize the state's ISF acquisition tool and dedicating the rights to ISF use was identified as an appropriate legal mechanism to protect the rights in perpetuity.

In response to CWCB's request, CPW's offers the attached report which details our assessment, professional opinions, and recommendations on the proposal. The report includes details about several factors the Board must consider in evaluating the appropriateness of the acquisition, specifically the natural environment and whether that natural environment will be preserved and/or improved to a reasonable degree by the water available from the proposed acquisition. The Shoshone Reach of the Colorado River is a high-gradient, dangerous segment of river, so no fishery and habitat studies existed in the reach prior to 2023. CPW staff conducted fishery surveys to fill this data gap and coordinated with CRD and CWCB staff to assess flow-habitat relationships using two-dimensional hydraulic habitat modeling.

Based on these assessments, CPW concludes there is a flow-dependent natural environment that can be preserved and improved by the proposed acquisition. The water right preserves the historical flow regime in the Colorado River upstream while improving flows in the Shoshone Reach by adding additional wetted area and suitable fish habitat to a historically dewatered section of the Colorado River. The best use of this water is to preserve and improve the natural environment at any flow rate up to 1408 cfs, the amount decreed for the subject water rights. Additionally, hydraulic-habitat modeling shows that fish habitat improves in the Shoshone Reach at flows up to at least 3000 cfs. However, this upper threshold of 3000 cfs is based on the upper limit of the hydraulic-habitat model. It is also our professional opinion that flows

greater than 3000 cfs provide improvements to fish habitat, specifically by supporting important geomorphic functions and habitat maintenance. Based on professional expertise, flows greater than 3000 cfs maintain an aquatic food base, provide additional thermal refuge areas, and support fish passage. Given the anticipated biological benefits, CPW staff believes this acquisition will preserve and improve the natural environment to a reasonable degree and recommends the CWCB accept the interest in the acquired water. CPW staff will be available at the May CWCB meeting to address the benefits provided by the proposal and to answer any questions about the fishery and associated flow benefits of dedicating the Shoshone water rights to ISF use.

Sincerely,



Jeff Davis

Director of Colorado Parks and Wildlife

Biological Evaluation of the Shoshone Water Rights Instream Flow Acquisition



Colorado Parks and Wildlife

May 6, 2025

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1. Introduction

Built in the early 1900s, the Shoshone Hydroelectric Power Plant sits on the north bank of the Colorado River in the middle of Glenwood Canyon. Currently owned and operated by Public Service Company (PSCo), a subsidiary of Xcel Energy, the power plant and associated direct flow water rights are used to generate hydroelectric power by diverting flow from the Colorado River through two hydropower turbines. The water rights consist of a relatively senior water right with a 1905 priority date for 1250 cfs and a junior right with a 1940 priority date for 158 cfs. The combined total of 1408 cfs is decreed for non-consumptive beneficial use of power generation.

The seniority, magnitude and decreed use of these water rights, when combined with a call on the water right(s), have historically commanded water administration on the Colorado River. When a valid call is placed and administered at the Shoshone power plant, junior appropriators upstream are directed to curtail surface diversions or provide augmentation water to replace out of priority depletions to the calling right. Additionally, a Shoshone call dictates reservoir releases that supplement baseflows in the Upper Colorado River. During periods of low flows in the river, which can extend from the conclusion of spring runoff through the winter, the diversion is legally required to sweep, or divert the entirety of the river to place a call on the hydropower right. This administrative requirement results in the river channel being significantly dewatered for 2.4-miles between the Shoshone Dam and power plant outfall. Without the Shoshone call in place, junior appropriators are entitled to exercise their water rights, depleting streamflows throughout the Upper Colorado Basin and impacting many water rights, including instream flow (ISF) water rights held by the Colorado Water Conservation Board (CWCB).

The Colorado River District (CRD) is in the process of acquiring the Shoshone water rights from PSCo. In partnership with the CWCB, the CRD has proposed adding an ISF beneficial use to the water rights by filing a joint water court change case application. Once a decree is obtained, the Shoshone water rights can be dedicated to CWCB to exercise ISF use when the rights are not used or only partially used to generate hydropower. Furthermore, should the power plant be decommissioned, ISF use will become the sole beneficial use for the water rights. The reach defined for ISF use extends from the point of diversion for the hydropower plant at Shoshone Dam approximately 2.4 miles downstream to the power plant outfall (Map 1). This reach is referred to as the Shoshone Reach and is described in detail below.

CPW supports CWCB's ISF Program by providing biological and technical expertise and assists CWCB staff in making a determination of whether the natural environment will be preserved and/or improved to a reasonable degree by the water made available under the proposed acquisition. CPW staff use professional judgement and best available data to make that determination and in some instances collect additional biological data where little exists. The

Shoshone Reach of the Colorado River is a high-gradient, dangerous segment of river, so limited biological information existed in the reach prior to 2023. CPW reviewed existing data, collected additional data, and worked with CWCB, CRD, and consultants to develop additional studies for the proposed acquisition. The following report is CPW's evaluation of the proposed acquisition and CPW's recommendations to the Board pursuant to C.R.S.37-92-102(3).

2. Natural Environment & Biological Data

2.1 Natural Environment Overview

The Shoshone Reach of the Colorado River runs through the central portion of Glenwood Canyon, a confined canyon where the river over time carved a deep gorge that runs nearly 15-miles between 2,500 feet high walls of sedimentary rock. The canyon is a heavily trafficked corridor and the river and its floodplain are confined by Interstate 70, a streamside recreational path, and railroad. The river is heavily used by whitewater enthusiasts and floatboaters. In the Shoshone Reach, steep riverbed drops create renowned rapids for expert whitewater kayakers. Downstream of the outlet of Shoshone Power Plant, the Shoshone Rapids are targeted by private and commercial whitewater boaters spring through fall as flows allow. Immediately below the rapids, year-round casual and angler floatboating occurs from Grizzly Creek to Glenwood Springs. Throughout Glenwood Canyon, there are diverse outdoor recreational opportunities beyond river whitewater and floatboating including coldwater sportfishing, hiking, rock climbing, streamside bike and pedestrian trail use, vapor caves, and hot springs. These recreational opportunities provide the foundation of the local tourism-based economy.

The infrastructure and operation of the Shoshone water rights creates significant hydrological alteration to the Colorado River. The dam was constructed to impound and divert water for hydropower generation and creates a barrier to downstream sediment transport and upstream river connectivity for aquatic organisms, especially fish. For a Shoshone call to be administered the structure much divert the called priority water. This can result in the legal diversion of the entirety of the Colorado River when flows are less than 1408 cfs, which leaves the Shoshone Reach in a dewatered state. During seasonally low flows, the Colorado River flows are comprised of seepage from the dam (Photo 1), groundwater, and tributary inputs. Under these diminished flow conditions, aquatic habitat persists mainly in deep pools and glides that are isolated by steep boulder drops or shallow riffles that present passage challenges for fish. Aquatic organisms are impacted by habitat fragmentation and limited occupiable wetted habitat. Through the reach, there are many insurmountable drops created by the river gradient and large boulder constrictions. While the Shoshone water rights call may have specific localized impacts to the Shoshone Reach, there are broad benefits provided by the call in the form of flow supplementation to the Colorado River mainstem and its tributaries.

Despite the anthropogenic alteration of the Colorado River through Glenwood Canyon, the Shoshone Reach continues to support a variety of native and sport fisheries and some limited

riparian areas. Wildlife commonly encountered include bighorn sheep, river otters, beaver, Mule Deer, elk, Peregrine Falcons, and eagles. Riparian and upland plant communities generally consist of cottonwood and alder in the riparian areas, and oak, pine, spruce, fir, and aspen trees in the uplands. The unique canyon geology includes caves, springs, and geothermal outputs. The discrete and diffuse geothermal springs occur at the eastern and western ends of Glenwood Canyon, including one of the largest hot springs in the state of Colorado, Glenwood Hot Springs and in the popular Yampah Vapor Caves. These and other extraordinary values of the Colorado River between Gore Canyon and Glenwood Canyon qualify it as eligible for a federal Wild and Scenic Rivers designation.

2.2 Colorado River Fish Community

2.2.1 Fish Community Overview

The Colorado River hosts a diversity of native river fishes and abundant coldwater sportfishes. The native fish community inhabiting the Colorado River in proximity to and through the Shoshone Reach includes multiple cold and cool water species, including small-bodied sculpin and dace, and larger-bodied Bluehead Suckers, Flannelmouth Suckers, and Roundtail Chub, which are naturally adapted to a wide range of mainstem river habitats and water quality conditions. A variety of coldwater salmonid species, both native and introduced, comprise the sportfish community, including (in order of abundance): Brown Trout, Rainbow Trout, Mountain Whitefish, and Cutthroat Trout. The coldwater sportfish thrive in colder temperatures and clearer waters than Colorado River mainstem native fish, but are able to withstand some seasonal perturbations including warmer summer water temperatures and occasional sediment flows from monsoonal rains. CPW manages the Colorado River from its headwaters downstream to Rifle for coldwater sportfish, including the Shoshone Reach. Near Rifle, warmer river temperatures develop as well as increased turbidity. Critical Habitat begins at the Highway 13 bridge in Rifle for the federally listed Threatened and Endangered river fishes, Colorado Pikeminnow and Razorback Sucker, and farther downstream near the Utah Border for Bonytail Chub and Humpback Chub. The diversity of Colorado River fishes and their life history characteristics are sustained by the variety of habitats and dramatic landscapes that characterize the river corridor in Western Colorado.

The current State Wildlife Action Plan (SWAP) identifies wildlife conservation priorities of CPW and recognizes the Bluehead Sucker, Flannelmouth Sucker, and Roundtail Chub (collectively known as the “Three Species”) as Tier 1 Species of Greatest Conservation Need. In the Colorado River and its tributaries, the Three Species persist from higher elevation waters around 8,000 feet downstream to the western desert and canyon reaches where they overlap with the Colorado River Threatened and Endangered fishes. As documented in the 2019 Rangewide Three Species Conservation Agreement and Strategy (“2019 Conservation Strategy”), the Three Species have become increasingly rare with significantly reduced occupancy in less than 50 percent of their historic range. The dramatic decline of the Three Species in mainstem rivers is attributed to habitat degradation due to hydrologic alterations and reduced water availability because of water diversions, fragmentation and passage

impediments from dams and diversions, and the widespread invasion of nonnative fishes that either hybridize with (in the case of native suckers), compete with, or predate upon native fishes. The ability of the Three Species to exploit ephemeral and intermittent tributary habitats and the seasonal movements (some greater than 100 miles) performed by native suckers, allows for their long-term persistence in the Colorado River.

The Upper Colorado River is well suited to coldwater fishes in its cooler high-elevation climate sustained by winter snowpack that provides cold waters that surge seasonally as runoff or upwells through springs. The widespread introduction of several trout species, Brown Trout, Rainbow Trout, and Brook Trout, and their salmonid relative, Mountain Whitefish, began in the late 1800s in the Colorado River basin. In the 1940s, Colorado wildlife officials introduced the Mountain Whitefish, another Colorado native fish, from its indigenous waters in the Yampa River to the Roaring Fork River to increase diversity in angling opportunities. Expansion of whitefish into the Colorado River above Glenwood Canyon is limited by Shoshone Dam, as it provides a substantial barrier to upstream fish passage. Once the only trout in the Colorado River, native Colorado River Cutthroat Trout continue to use the Colorado River mainstem periodically, but primarily sustain their populations in cold tributary streams where they are better suited to high elevation and isolated habitats than the introduced trout species. Coldwater sportfish and sculpin are best suited to the coldwater reaches of the Colorado River where high seasonal flows and higher stream gradients maintain hydraulic conditions for the maintenance of preferred habitats for reproduction, growth, and forage.

Rainbow Trout and Brown Trout are the two most popular sportfish targeted by anglers in Colorado (2020 Colorado Angler Survey Summary Report). Prioritized for Wild Sportfish Management, CPW categorizes the Colorado River as “302 - Salmonid Recreation Stream” which specifies that the fishery consists of mostly wild-produced trout, with some stocking of Whirling Disease (WD) resistant Rainbow Trout fingerlings to overcome losses from the WD parasite. Increasingly successful, the current fishery management strategy allows CPW to designate the Colorado River in Glenwood Canyon as a Quality Trout Water, as it is considered a productive, quality fishery where anglers are likely to catch quality-sized trout (greater than 14 inches). Fishing the Colorado River is an enticing recreational opportunity that attracts visitors and residents to the area and generates millions of dollars for local economies annually. Small native fish (sculpin and dace) serve as a nutritious food source along with a healthy macroinvertebrate community to support the sport fishery, and the rare native fishes occasionally encountered by anglers while fishing for sportfish add unexpected and unique encounters.

2.2.2 Fish Survey Results

Recent CPW fish surveys in the Shoshone Reach of the Colorado River (November 2023 and October 2024) revealed a notably high abundance of desirable fish species. These efforts were the first documented fish surveys by CPW in this section of river. The sampling included both opportunistic capture surveys for presence detection (spot electrofishing) and a population

survey to estimate relative fish abundance and biomass. The November 2023 survey occurred during an extended period of time when the Shoshone power plant was inoperable (February 2023-August 2024), allowing more natural flow conditions. Due to flow conditions, the 2023 survey was limited to electrofishing along the banks and wadeable river margins. Spot electrofishing in 2023 detected the presence of Brown Trout and Rainbow Trout, confirming trout will migrate into and use the Shoshone Reach following a period of restored flows.

In October 2024, extensive spot surveys were conducted in the dewatered river channel after the power plant came back online. The 2024 spot electrofishing surveys demonstrated the extent of Brown Trout, Rainbow Trout, dace, sculpin, Mountain Whitefish, and Longnose Sucker (in order of relative abundance) and confirmed their presence throughout the 2.4-mile Shoshone Reach. In October 2024, CPW staff also conducted a depletion estimate to survey the population for the first time in order to assess fish abundance, biomass, and size class structure of the fishery (Photo 2). Fish captured during the survey include in descending order of abundance: dace, Brown Trout (Photo 3), Rainbow Trout (Photo 4), Mountain Whitefish, Longnose Sucker, Bluehead Sucker (Photo 5), and sculpin. Table 1 summarizes the Abundance (fish/acre), Biomass (pounds/acre), and Total Fish Length from tip of nose to tip of tail in inches calculated for each fish species encountered.

Table 1: Summary of Abundance (fish per acre), Biomass (pounds per acre), and the average and range of Fish Total Lengths (inches) for an October 23, 2024 survey in a dewatered Colorado River reach between Shoshone Dam and Shoshone Hydropower Plant near Flag Butress.

| Fish Species | Abundance fish/acre | Biomass pounds/acre | Fish Total Length Mean (Min-Max) inches |
|---------------------|--------------------------------|--------------------------------|--|
| Brown Trout | 205 | 205.1 | 11.3 (3.9 - 21.9) |
| Rainbow Trout | 157 | 125.6 | 13.0 (8.2 - 15.6) |
| Mountain Whitefish | 20 | 10.2 | 10.6 (5.6 - 12.3) |
| Sculpin <i>spp.</i> | 6 | -- | 3.4 (3.2 - 3.6) |
| Dace <i>spp.</i> | 260 | -- | 3.8 (1.9 - 5.2) |
| Bluehead Sucker | 8 | 2.3 | 8.3 (7.7 - 8.9) |
| Longnose Sucker | 14 | 7.1 | 10.7 (10.0 - 11.3) |

2.2.3 Fishery Discussion & Conclusion

Low flows in October 2024 in the Shoshone Reach provided CPW an opportunity to thoroughly evaluate the fishery in the high-gradient, boulder-lined river channel that would otherwise be

inaccessible. Though significantly depleted from its natural flow condition, the residual stream was sustained by a minimal flow of water bypassing the dam, perennial tributary flow, and spring flows that maintained pools, riffles, and runs to harbor a notable abundance of fishes. The presence of sub-adult Bluehead Suckers and a variety of age-classes of trout suggests that some spawning occurs in this reach in either mainstem or proximal tributary habitats. Juvenile and adult fish are able to find refuge from aquatic and terrestrial predators in the channel's limited wetted area, specifically in small habitat features created by large boulders and in runs and pools that hold residual depth. Furthermore, the persistence of large trout supports quality angling opportunities in the canyon-bound river that benefits local communities that are sustained by tourism-based economies.

The adaptability of the Three Species to intermittent and seasonally dynamic river conditions allows for their persistence in an altered river system. CPW researchers have documented the use of small tributary habitat in the Colorado River basin (Thompson and Hooley-Underwood 2019), where naturally ephemeral and intermittent stream conditions are similar to those in the Shoshone Reach under current hydropower diversion operations. Within proximity to Glenwood Canyon, fishery monitoring reaches at Lyons Gulch (6 miles upstream), No Name (lower Glenwood Canyon), South Canyon (6 miles downstream), and New Castle (13 miles downstream) have detected the presence of at least one of the Three Species during each sampling occasion between 2008 and 2024, and CPW considers the Colorado River to be occupied Three Species habitat throughout Glenwood Canyon.

The recent population survey of the Shoshone Reach in October 2024 documented the presence of juvenile Bluehead Suckers. Bluehead Sucker are more likely to exploit the local canyon reaches, as they are more often found in higher gradient, swifter velocity habitats compared to the Flannelmouth Sucker and Roundtail Chub (Thompson and Hooley-Underwood 2019). In particular, juvenile Bluehead Sucker primarily consume macroinvertebrates as a food source (2019 Conservation Strategy), thus they are likely to exploit the Shoshone Reach year-round based on the 2024 CPW macroinvertebrate and fish surveys. Flannelmouth Sucker are confirmed to use the Shoshone Reach, as a CPW PIT-tagged fish from the Eagle River was detected by a PIT-tag antenna in Debeque Canyon approximately 90 miles downstream, requiring the fish to migrate downstream through the Shoshone Reach, including the power plant diversion infrastructure. Despite their rarity, Roundtail Chub are regularly detected in approximately 50 percent of surveys at three locations surrounding Glenwood Canyon - Lyons Gulch, South Canyon, and New Castle - all of which exhibit habitat characteristics (low gradient, more turbid water) preferable to Roundtail compared to high-gradient canyon reaches (2019 Conservation Strategy). All Three Species use Glenwood Canyon at least briefly to access or find refuge given the dynamic conditions that offer seasonally and spatially variable resources. Ensuring the permanency of historical flows available through the Shoshone water right and restoring instream flow to dewatered Shoshone Reach will support the continued persistence of the Three Species in the Upper Colorado River.

The Shoshone Reach of the Colorado River in Glenwood Canyon supports a high-quality fishery, even in its seasonally dewatered state with limited wetted habitat. During the

October 2024 survey, the Shoshone Reach had very low flow, as the majority of the natural river flow above Shoshone Dam was diverted into the hydropower plant. The reduced channel, despite appearing from a distance to be flowing at a mere trickle, provides enough holding habitat in deep pools and glides and offers large cover features to harbor both small and large river fishes produced in the full spectrum of waters and resources lower in Glenwood Canyon. As the water recedes from the Shoshone Reach with declining seasonal flows, smaller fish find habitats with favorable velocities and small pools to occupy between large boulders. Microhabitats that support small-bodied fish like dace persist between small substrates and also support macroinvertebrate and algae food sources. Large predatory trout will find desirable slower velocities in deep, boulder-lined runs and pools where they successfully use these habitats to make a living through the winter - finding cover from their predators and hunting for their own prey. As encountered in the fish survey, an abundance of small-bodied prey, including sculpin, dace, and juvenile trout and suckers will sustain larger predatory trout. Rainbow Trout can subsist on the abundance of macroinvertebrates, a preferred prey item, that concentrate into the reduced wetted channel. Few competitors will invade their occupied habitat, especially for the adult fishes, as large drops in the river channel once connected by water become insurmountable (Photo 6). The presence of a variety of age classes of fish indicate that some supplemental reproduction for Colorado River native and sportfish populations occurs in the Shoshone Reach, particularly following a period of restored flows.

2.3 Biocriteria & the Macroinvertebrate Community

2.3.1 Biocriteria Overview

Macroinvertebrate data can be used to evaluate the overall health of a waterbody and to analyze stressors to an aquatic ecosystem using “biocriteria” or aquatic life metrics. Water quality samples only represent a singular moment in time and provide limited information on the combination of pollutants and stressors affecting a biological community. In contrast, macroinvertebrates are the best single assemblage for bioassessment due to their generally short life spans of approximately a year, limited migration patterns, representation in most Colorado habitats, and ease of collection. Although the Colorado Department of Health and Environment (CDPHE) has macroinvertebrate data for the COUCUC03 segment of the Colorado River from the outlet of Lake Granby to below the confluence with the Roaring Fork River, no sampling stations exist in Glenwood Canyon. To fill this data gap and assess biocriteria for the Shoshone Reach, CPW staff collected macroinvertebrate samples in the Colorado River at a location below Devils Hole Creek (CRblwDH) on November 5, 2024. During the sampling event, flows were very low (approximately 50 cfs) as the Shoshone power plant was operating (Photo 8). LRE Water performed laboratory identification of the samples and ran a standard 300-count sub-sample of the macroinvertebrate data through Colorado’s Ecological Data Application System (EDAS) program. Based on the analysis, CRblwDH meets the state thresholds for macroinvertebrate health and biodiversity.

2.3.2 Macroinvertebrate Survey Results

The summary tables below reports the macroinvertebrate community metrics that the state considers when assessing a stream's macroinvertebrate community and potential impairment. Macroinvertebrate metrics and thresholds are described in CDPHE Policy 10-1. Colorado's multi-metric index (MMI) is a combination of macroinvertebrate metrics used to score sites from 0 to 100. The MMI score for CRblwDH is 64.3 which exceeds the state's threshold (greater than 45) and meets the threshold for a "High Scoring Water" (greater than 56). The two auxiliary metrics used by CDPHE are the Hilsenhoff Biotic Index (HBI) and Shannon Diversity Index (SDI). HBI is an indicator of how many pollution-tolerant insects occupy the site where higher scores indicate a pollutant-tolerant community. The HBI score for CRblwDH, 4.44, is below the state threshold of 5.8 and considered typical. The SDI metric quantifies community biodiversity, with high scores indicating a greater variety of species present in a range from 0 to 5. The SDI score for this site is 2.17, narrowly meeting the state's threshold of greater than 2.1.

Table 2: Macroinvertebrate metrics (MMI, HBI and SDI) for CPW's macroinvertebrate survey site (CRblwDH) in the Shoshone Reach

| Station ID | Waterbody Name | Location | Latitude | Longitude | Collection Date | Biotype | MMI | Hilsenhoff Biotic Index (HBI) | Shannon Diversity Index |
|------------------|----------------|--------------------|----------|------------|-----------------|----------------|------|-------------------------------|-------------------------|
| WQCC Policy 10-1 | | | | | | 1 (Transition) | > 45 | < 5.8 | > 2.1 |
| CRblwDH | Colorado River | Below Devil's Hole | 39.57608 | -107.20968 | 05-Nov-24 | 1 | 64.3 | 4.44 | 2.17 |

Additional metrics analyzed by CPW staff evaluate the presence of sensitive macroinvertebrate species belonging to the mayfly (*Ephemeroptera*), stonefly (*Plecoptera*), or caddisfly (*Trichoptera*) orders, also known as "EPT" taxa. The metric "% EPT non-*Baetidae*" indicates how many insects belong to the EPT orders excluding the *Baetidae* family. *Baetidae* are mayfly species that are pollution-tolerant, so they are intentionally excluded from this metric. At the CRblwDH site, approximately 90% of the individuals collected in the sample belong to EPT orders while only 25% of those species belong to the EPT category which excludes *Baetidae*, indicating that a vast majority of EPT individuals at this site were pollution-tolerant *Baetidae* species. The "% Intolerant taxa" category assesses the percentage of the sample with pollution-intolerant species. At the CRblwDH site, despite a high presence of *Baetidae* species, there is a strong presence of pollution-intolerant taxa with 39.1% of the sample belonging to that category. This sample had 23 total taxa present, which demonstrates the macroinvertebrate community is species-rich, thus considered to have relatively high biodiversity. Of the 23 taxa present, 11 taxa were EPT species. The final metric assessed by CPW is sediment Tolerance Index Value (TIV) to characterize the sediment tolerance of the macroinvertebrate community on a ranking of 1 to 10. The sediment TIV score for this site is 5.62, meeting the threshold of less than 7.2 for this region. The relatively high abundance of sediment-sensitive macroinvertebrate species indicates that fine sediments are relatively low in the Shoshone Reach, which is expected in a high-gradient transport reach with an upstream on-channel dam.

Table 3: Additional macroinvertebrate metrics assessed for CPW's macroinvertebrate survey site (CRblwDH) in the Shoshone Reach

| Station ID | Waterbody Name | Location | EPT % non Baetidae | % EPT | % Intolerant Taxa | Total Taxa | EPT Taxa | Sediment TIV |
|------------|----------------|--------------------|--------------------|-------|-------------------|------------|----------|--------------|
| CRblwDH | Colorado River | Below Devil's Hole | 24.7 | 90.5 | 39.1 | 23 | 11 | 5.62 |

2.3.3 Macroinvertebrate Community Discussion & Conclusion

All indices demonstrate Aquatic Life Use attainment at this site for the macroinvertebrate community despite dewatered conditions leading up to and during the sampling event. Approximately three months of extended dewatering occurred prior to sample collection. The sample was collected in a portion of a riffle where perennial water in a low-flow channel likely persists year-round despite the diversions into the power plant (Photo 9). Even under these low flow conditions, CRblwDH is meeting and even surpassing select thresholds for macroinvertebrate health and biodiversity in the low-flow channel. This indicates both good habitat and water quality are maintained in the consistently wetted portions of the channel. When Shoshone is operational and diverting, insects entrained in the river bed outside of the low-flow channel may perish as the channel dries. Several macroinvertebrate families within the orders of stonefly (6 families) and caddisfly (5 families) are present in the Colorado River upstream of Shoshone at a survey site sampled by Timberline Aquatics near Sweetwater, but are missing in the river below Shoshone Dam (GEI, 2025). Both stoneflies and caddisflies make limited movements and live attached to or under rocks. As the waters recede, they will become stranded. This is one explanation for the low SDI score and low percentage of EPT non-*Baetidae*. The missing families would likely occupy this segment of the Colorado River if there were consistent flow throughout the channel, and they may recolonize if consistent flows return.

With an overall diverse population of macroinvertebrates in the low-flow channel, the macroinvertebrate community in the Shoshone Reach has potential to improve. The current resident community of insects serves as a population center that would expand as the wetted channel area increases with additional flow. Particularly during the winter, additional flows will result in less anchor ice within the canyon, which will likely improve the macroinvertebrate community diversity. With fluctuating river flows, fish can move in to the Shoshone Reach when flow increases, but food may be limited in rewetted habitat if the majority of insects persist in the perennial low-flow channel. A healthy and diverse macroinvertebrate community is a crucial component of the ecosystem and indicates potential for healthy fish populations.

3. Instream Flow Evaluation & Flow-Habitat Relationships

3.1 Instream Flow Evaluation Overview

CPW supports CWCB's ISF Program by providing biological and technical expertise and assists the CWCB in making a determination of whether the natural environment will be preserved and/or improved to a reasonable degree by the water made available under the proposed acquisition. CPW staff use professional judgement and best available data to make that determination and in some instances may collect additional biological data to fill data gaps. No fishery or habitat studies existed in the Shoshone Reach prior to 2023 because its gradient and occasional high flows often make it inaccessible and dangerous. In addition to fisheries sampling conducted in 2023 and 2024, CPW staff recommended collecting data necessary for an instream flow evaluation using the Instream Flow Incremental Methodology (IFIM). IFIM is a widely accepted method used to quantify how hydraulic habitat attributes relevant to fish vary with flow over a representative reach. The two-part modeling approach uses habitat suitability criteria (HSC) indices and hydraulic modeling to evaluate habitat suitability as a function of discharge for specific aquatic species. IFIM has been widely used in Colorado for instream flow evaluations on large and complex rivers, namely the Dolores River, San Miguel River, Cache La Poudre River, Blue River, and Colorado River between Kremmling and Dotsero. The IFIM methodology uses a hydraulic model, paired with HSC for fish species and life stages of interest. Habitat suitability for hydraulic variables of depth and velocity, and sometimes substrate and cover, are combined into a composite score which can be summed over the representative study reach to calculate the area of suitable habitat, also known as weighted usable area (WUA). WUA is a measure of suitable fish habitat that varies as depth and velocity change with discharge.

3.1.1 Overview Freshwater Consulting Habitat Modeling - 2023-24

In November 2023, CRD contracted with two consulting firms, River Restoration and Freshwater Consulting, to evaluate hydraulic habitat-flow relationships in the Shoshone Reach using IFIM.

Two-dimensional (2D) hydraulic modeling was performed by River Restoration using SRH-2D on a representative reach of the Colorado River. The study reach, referred to as Site 1, measured 1850 feet long with an upper terminus approximately 0.5-mile downstream of the Shoshone Dam. Site 1 includes two large pools divided by riffle. Freshwater Consulting conducted habitat suitability analysis using a spreadsheet-based model and output from the 2D hydraulic model. Suitable habitat area was modeled for flows between 50 and 3000 cfs for four focal species in their adult life stage - Brown Trout, Rainbow Trout, Mountain Whitefish, and Flannelmouth Sucker. The seven selected flow rates modeled were 50, 250, 700, 1020, 1250, 1400, and 3000 cfs.

CPW reviewed and participated in the initial model scoping and selection of appropriate focal species and associated HSC. Site-specific HSC are derived from direct observations of actual

fish locations within river habitats. In the Shoshone Reach, deriving site-specific HSC was not possible due largely to safety concerns given dangerous river hydraulics, as well as time limitations. It is standard and accepted practice to use existing HSC from literature or comparable studies based on professional judgement when site-specific HSC is not possible. For the Shoshone Reach, HSC used previously for the Colorado River Wild and Scenic reach were adapted to include fish habitat preferences that are unique to a high-gradient, canyon study area such as the Shoshone Reach, namely deep pools. Adult life stages were selected because the characteristics of the canyon generally favor these larger-bodied, mature species.

3.1.2 Results Freshwater Consulting Habitat Modeling - 2023-24

Results summarized below are from the September 30, 2024 Freshwater Consulting Report. Results show that suitable habitat area (or WUA) increases rapidly between 50 to 700 cfs for all species. For the salmonid species (Brown Trout, Rainbow Trout, and Mountain Whitefish), WUA continues to increase precipitously up to 1020 cfs. Maximum WUA occurs at 1020 cfs for Brown Trout, 1400 cfs for Rainbow Trout, 1250 to 1400 cfs for Mountain Whitefish, and 700 cfs for Flannelmouth Sucker. Habitat suitability for Flannelmouth Sucker is lower than the other species overall and declines at flows greater than 700 cfs. This is because the preferred depth of Flannelmouth Sucker ranges between 1 to 4 feet with declining suitability at depths greater than 4 feet. Alternatively, HSC for salmonid species are high for depths 10 feet and greater. Given the abundance of deep water in the pool and run habitats that dominate Site 1, these flow-habitat relationships are explained.

Overall WUA, calculated by averaging the results of the four fish species, is maximized at 1250 cfs with modest declines at flows in the 1400 to 3000 cfs range. The decline in WUA at flows greater than 1400 cfs is driven in large part by high water velocities that are less suitable for all species. The initial results for Site 1 show the highest habitat availability for Brown Trout and Rainbow Trout, Mountain Whitefish, and Flannelmouth Sucker at flows in the range of 700 to 1400 cfs. The results show modest declines in suitable habitat between 1400 and 3000 cfs, although there is still suitable habitat available for fish species at higher flows. As incremental flows between 1400 and 3000 cfs were not assessed by Freshwater Consulting, it is difficult to directly evaluate the relationship between these higher flows and WUA.

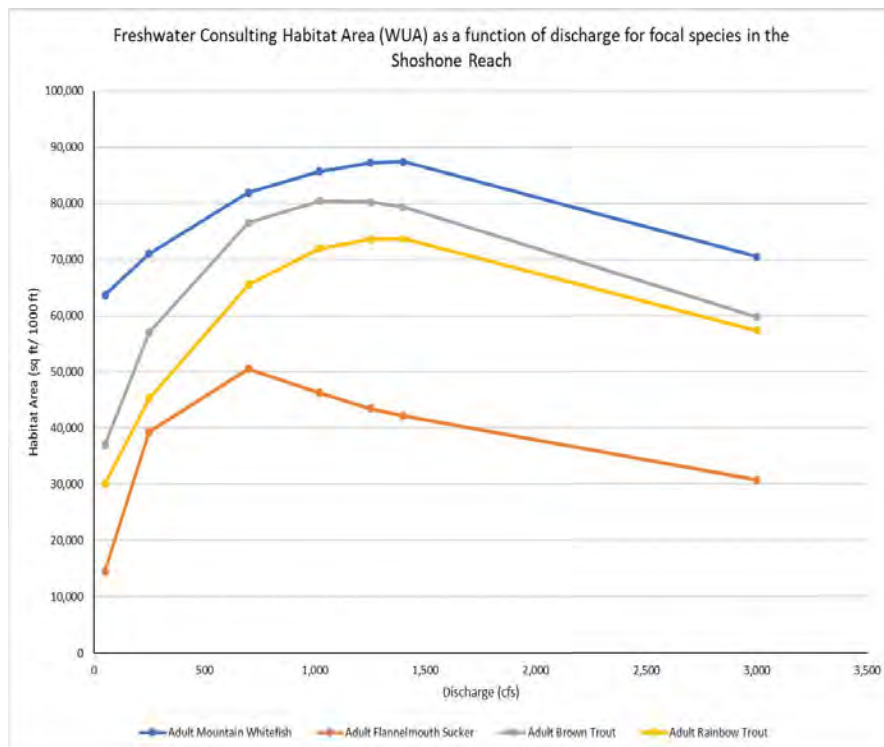


Figure 1: Freshwater Consulting assessment of Weighted Usable Area (WUA, square-feet per 1000 linear-feet of stream) across a range of river flows (cubic feet per second, CFS) for Site 1 in the Shoshone Reach of the Colorado River for four focal fish species.

3.2 Hydraulic Habitat Model Limitations

The Shoshone Reach is a high-gradient confined canyon with highly variable streambed roughness, water depths, and velocities (GEI, 2025). Within Colorado, there are multiple examples of canyon reaches like the Shoshone Reach supporting dynamic and high quality habitats for coldwater sportfish such as Brown Trout and Rainbow Trout, including the No Name Reach on the Colorado River, Gunnison Gorge on the Gunnison River, and Cheesman Canyon on the South Platte River. This is evidenced in abundance and biomass metrics documented in CPW fish surveys. Like the Shoshone Reach, many portions of these river reaches have hydraulic conditions that limit surveying efforts or make them impossible due to safety concerns. Complex hydraulics in canyon reaches like the Shoshone Reach also present nuanced fish habitat use that can be over-simplified by hydraulic habitat modeling.

The Freshwater Consulting results were developed from a single site with somewhat homogenous habitat features and a relatively coarse spatial resolution with a grid size of approximately 4 x 4 feet. While this grid size is appropriate for IFIM, it is unable to represent all microhabitat refugia used by fish. Site 1 is a pool dominated reach with two large pools divided by a boulder and cobble riffle. The reach was bound on the downstream end by a rapid created by an alluvial fan from Devils Hole Creek. This reach was selected for the survey because of surveyor safety concerns given hydraulic conditions at the time of the

survey. The limited hydraulic habitat perspective did not account for more complex habitat features present in the Shoshone Reach that are exploited by fish.

Much of the usable fish habitat in the Shoshone Reach, especially at higher flows, is in the form of velocity refuges created by variable bed substrate, large boulders, and the boundary layer of the streambed. 2D models simulate hydraulics in lateral and longitudinal directions, producing depth-average values for water velocity that moderate the variability in velocity throughout the water column. The use of depth-average velocity to calculate habitat suitability underestimates the amount of suitable habitat available in streambeds, particularly in rivers with high roughness like the Shoshone Reach of the Colorado River. Microhabitats and near-bed features used by fish are not captured with the depth-average velocities produced by the hydraulic model. Water velocities are typically lowest along the stream bed, and the variability in channels with high roughness will be even more pronounced. In channels with high roughness, actual velocities along the stream bed can be 40 to 60% lower than the depth-average velocity. Therefore, habitat suitability models which rely on depth-average velocity do not account for fish-favorable velocities in roughness features. In the Shoshone Reach, this likely resulted in an underestimate of suitable fish habitat.

3.2.1 Overview Ecosystem Sciences Habitat Modeling - 2024-25

During fall 2024, CRD contracted River Restoration and Ecosystem Sciences, an Idaho consulting firm, for additional modeling to better understand the relationship between fish habitat and flows in the Shoshone Reach. During the fall and winter of 2024-25, River Restoration and Ecosystem Sciences performed fieldwork to assess a second study site (Site 2) and address the limitations in the initial analysis. The addition of Site 2 increased the spatial coverage of the hydraulic habitat model and introduced increased channel complexity and habitat features into the model. The upper terminus of Study Site 2 is immediately downstream of Site 1 and the reach is approximately 1830 feet long. Site 2 is lower gradient and less constrained with a greater variety of habitat features, including a split-channel island, more variety in the bed composition, and complex riffle, run, and pool habitats. Adding Site 2 increased the total spatial representation of habitat evaluated to include approximately 29% of the Shoshone Reach. Lastly, five additional higher flow rates were also modeled for both sites to develop a better understanding of the habitat-flow relationships between 1500 and 3000 cfs. For the 2024-25 modeling effort, habitat suitability was evaluated at flows of 50, 250, 700, 1020, 1250, 1400, 1500, 1750, 2000, 2250, 2500, and 3000 cfs.

3.2.2 Results Ecosystem Sciences Habitat Modeling - 2024-25

Results summarized below are from the April 22, 2025 Ecosystem Sciences report. Results for Site 1 assessed by Ecosystem Sciences (Figure 2) demonstrate a similar trend to the Freshwater Consulting results (Figure 1) with steep increases in WUA for each species between 50 and 700 cfs. For Brown Trout and Rainbow Trout, WUA continues to increase sharply until 1020 cfs. Maximum WUA occurs at 2250 cfs for Brown Trout and Rainbow Trout,

2000 cfs for Mountain Whitefish, and 1500 cfs for Flannemouth Sucker. Overall WUA is maximized at 2250 cfs. Above 2250 cfs, WUA generally plateaus and slightly declines between 2500 and 3000 cfs. This differs from the Freshwater Consulting Site 1 evaluation, but it is difficult to compare the two because incremental flows between 1400 and 3000 cfs were not evaluated by Freshwater Consulting.

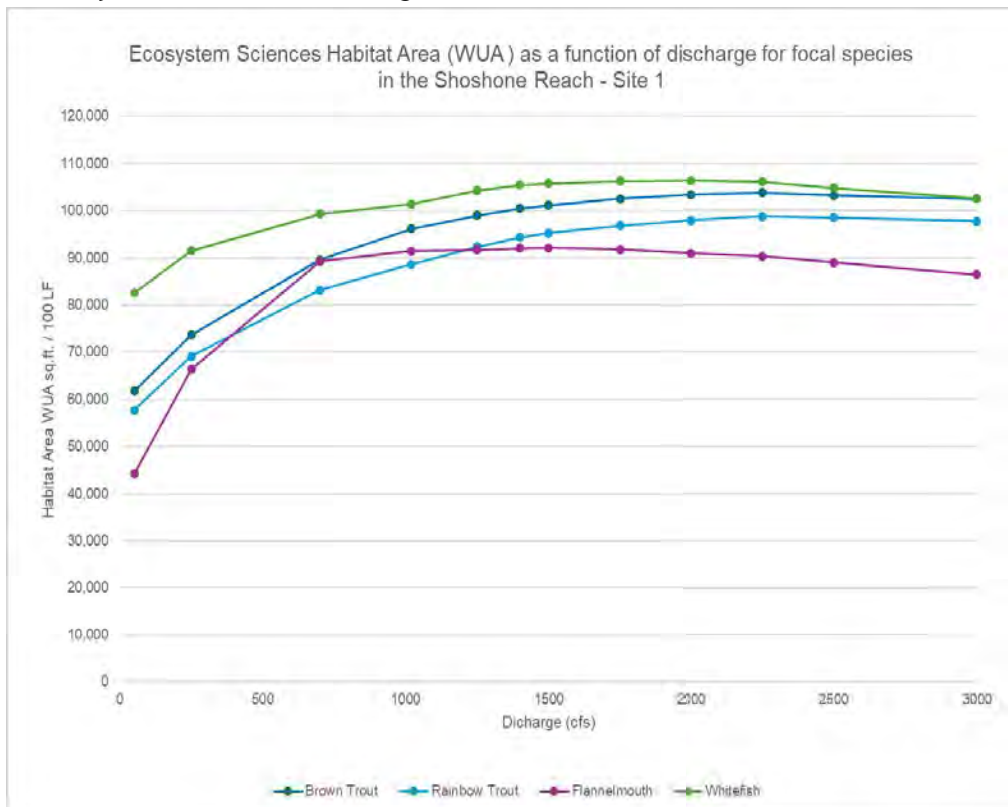


Figure 2: Ecosystem Sciences assessment of Weighted Usable Area (WUA, square-feet per 1000 linear-feet of stream), across a range of river flows (cubic feet per second, CFS) for Site 1 in the Shoshone Reach of the Colorado River for four resident fish species.

Results for Site 2 (Figure 3) demonstrate a trend of gradual and consistent increases in WUA for all four species as flows increase (as compared to the dramatic increase followed by a plateau in Site 1). Site 2 has a less constrained channel and floodplain compared to Site 1. Site 2 has more habitat complexity and depositional features that create a mid-channel island that splits the river at lower flows. Site 2 also contains deep pool and shallow riffle features similar to Site 1. For the four species evaluated, maximum WUA occurs at relatively high flows with a maximum WUA at 3000 cfs for the salmonid species and 2000 and 3000 cfs for Flannemouth Sucker. Benefiting from the hydraulic complexity within Site 2 and supporting their lower depth and velocity preferences, WUA for Flannemouth Sucker is greatest at Site 2. As flows increase in Site 2, portions of the islands inundate, and the split channels expand and connect, increasing the variety of depth and velocity conditions suitable for Flannemouth Sucker. Conversely, for adult salmonids, WUA is lower at Site 2 than Site 1, though Site 2 still contains important habitats.

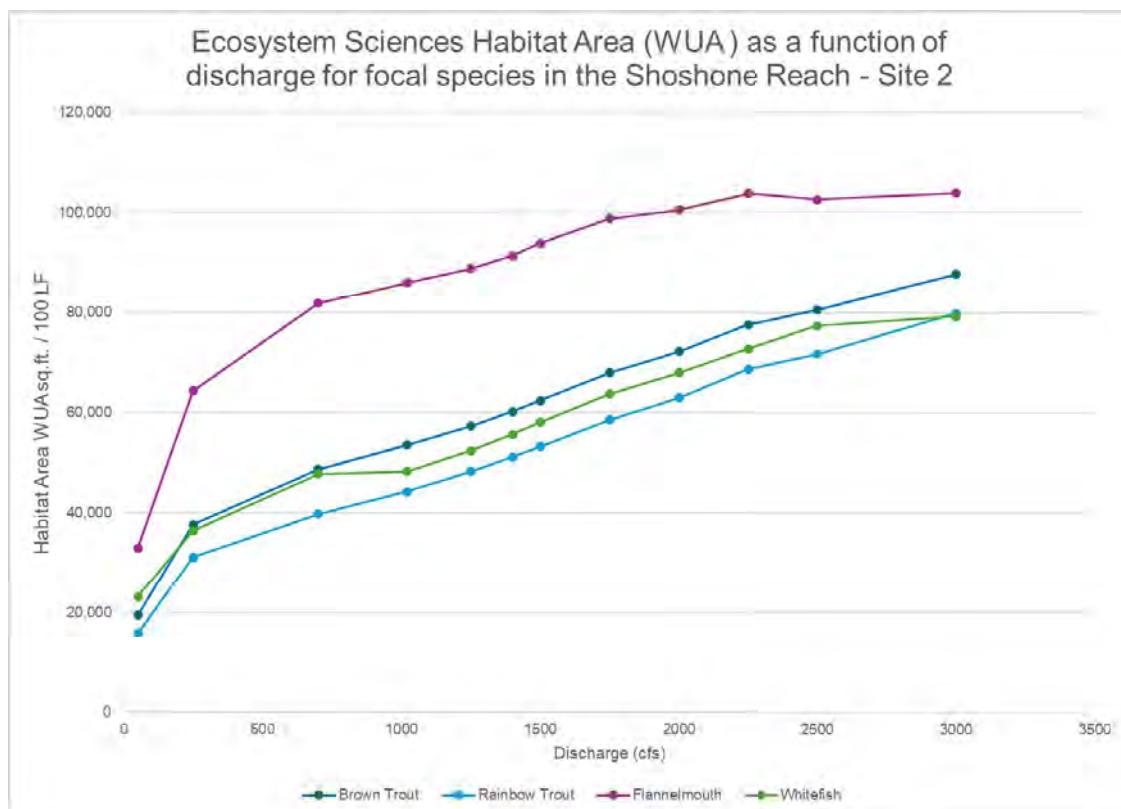


Figure 3: Ecosystem Sciences assessment of Weighted Usable Area (WUA, square-feet per 1000 linear-feet of stream), across a range of river flows (cubic feet per second, CFS) for Site 2 in the Shoshone Reach of the Colorado River in Glenwood Canyon for four resident fish species.

Adult life stage species were the focus of the habitat modeling because of complex hydraulic conditions in the Shoshone Reach. While not specifically modeled, juvenile trout will benefit from the same lower velocity, shallow habitats that benefit Flannemouth Suckers. These conditions provide suitable rearing conditions for juvenile trout. Spawning habitat was not explicitly modeled but gravel bars provide spawning habitat for fish including Bluehead Suckers and Flannemouth Suckers at a wide range of flows. Gravel bar deposits are present around the island features at Site 2 and is where Brown Trout redds were observed in late Fall 2024 (Photo 7).

3.2.3 Addressing Modeling Limitations

The Shoshone Reach is a high-gradient river with highly variable streambed roughness, water depths, and velocities which contributed to high velocities represented by the hydraulic model that under-represented actual suitable fish habitat availability. To address this issue, Ecosystem Sciences used an additive model to estimate the composite habitat suitability by adding depth and velocity suitability for each cell from the hydraulic model. Conversely, Freshwater Consulting used computations that multiplied depth and velocity suitability to estimate the composite habitat suitability score for each cell. The limitation of the multiplicative approach for composite suitability is that high depth-average velocities will result in low or zero habitat suitability scores for areas where suitable velocities are actually

present along the rough streambed. In Freshwater Consulting's computations, velocity suitability scores of zero will drive the overall habitat suitability to be deemed unsuitable. This misrepresents velocity refuges used by fish and underestimates suitable habitat because in reality suitable velocities exist along the streambed in roughness features. In fact, a substantial amount of these roughness features exist in the Shoshone Reach due to the highly variable substrate, velocities, and depths (GEI, 2025). Therefore, suitable habitat is under-represented by traditional IFIM modeling computations in steep canyon reaches like the Shoshone Reach. When using an additive model to estimate habitat suitability to account for a high degree of roughness in the channel, WUA results account for microhabitat features that provide important fish habitat.

3.3 Discussion and Conclusions on Flow-Habitat Relationships

Given the limitations and uncertainties discussed above, it is helpful to review the results from the Freshwater Consulting and Ecosystem Sciences reports in conjunction with one another. Freshwater Consulting used a more traditional approach for IFIM that multiplied depth and velocity suitability to estimate the composite habitat suitability and associated WUA. As previously discussed, this approach likely underestimated suitable habitat used by fish in the Shoshone Reach due to the use of depth-average velocity, particularly at higher flows. The Freshwater Consulting results indicate that overall WUA was highest between 1250 to 1400 cfs at Site 1 when averaged across the four fish species. Overall WUA increased steeply from 50 to 700 cfs before plateauing between 1020 and 1400 cfs and then declining from 1400 to 3000 cfs. As no flow values were evaluated between 1400 and 3000 cfs, it is not clear how WUA changed in between these values.

The Ecosystem Sciences report analyzed WUA at two sites within the Shoshone Reach, including the same site evaluated by Freshwater Consulting (Site 1), using an additive approach for estimating composite habitat suitability from modeled water depths and velocities. This approach was intended to address the aforementioned limitation of using depth-average velocity to calculate the composite habitat suitability. When averaged across all species, WUA peaked at 2250 cfs at Site 1. Similar to the Freshwater Consulting results, WUA increased sharply for all species between 50 and 700 cfs. WUA then increased gradually between 700 and 2000 cfs, and declined slightly between 2250 and 3000 cfs. At Site 2, there was a very steep increase in WUA between 50 and 250 cfs and a more moderated increase between 250 and 700 cfs when averaged across species. WUA then increased steadily from 1020 to 3000 cfs with no evidence of a distinct plateau.

When considered together, the habitat suitability studies by Ecosystem Sciences and Freshwater Consulting indicate that using the Shoshone water rights of 1250 and 158 cfs for a total of 1408 cfs would benefit fish habitat, as WUA consistently increased at both sites from 50 to 1400 cfs on average. However, the two reports differ in what happens to WUA above 1400 cfs. The Freshwater Consulting report indicates the WUA declines at 3000 cfs. In contrast, the Ecosystem Sciences report indicates that WUA continues to increase (Site 2) or remain relatively stable (Site 1) for flows greater than 1400 cfs. Given the limitations of

using depth-average velocity to estimate the total amount of suitable habitat in the Shoshone Reach, which provides complex and dynamic conditions that support fish, it is likely that habitat suitability does not decrease significantly as flows increase up to 3000 cfs due to the presence of lower velocities near roughness features.

3.3.1 Other Considerations in Assessing Flow-Habitat Relationships

With regard to suitable habitat, the importance of deep pools in habitat suitability models is often underestimated and modifications for the presumed importance of deep pools in the Shoshone Reach are substantiated by CPW research. Recent CPW research shows that residual pool depth is the most important physical habitat variable driving Brown Trout population biomass. Additionally, this research shows that Quality Brown Trout were only present in pools with depths of 3 feet or greater and total fish biomass increased with increasing residual pool depth (Kondratieff and Richer 2022). In addition to this research, many other studies from Colorado rivers have shown the value of deep pools in providing important habitat functions for native Cutthroat Trout and Mountain Whitefish, such as depth cover, overwinter and low-flow refugia (Harig et al. 2000, Behnke 2002, Beinstadt et al. 2004). Important pool habitat exists in the Shoshone Reach even under dewatered conditions. Additional water provided by the instream flow acquisition will support refreshing flows to maintain these pool habitats.

High flows provide important geomorphic and ecological functions related to sediment transport and habitat for benthic macroinvertebrates. Flushing fine sediment is critical to maintain habitat for fish and macroinvertebrates, especially in locations that receive episodic sediment inputs, which has been a recurring issue in Glenwood Canyon following recent wildfires. As wetted area increases with discharge, there is more habitat available for macroinvertebrates, the primary prey resource for the fishery. Higher flows may also activate new pathways through high-gradient rapids and steep drops, which could improve conditions for fish movement in some locations, providing access to a more optimal refuge habitat. The combination of increasing WUA and improved geomorphic and ecological functions indicates that using the Shoshone water rights for instream flow would be beneficial for the fishery in the study reach.

Instream flows in the Shoshone Reach will increase suitable habitat for coldwater sportfish and native species. Recent habitat suitability studies have demonstrated that when greater flows are present, the amount of usable habitat for Rainbow Trout, Brown Trout, and Mountain Whitefish increases substantially up to 1400 cfs (Freshwater Ecosystems 2024 and Ecosystem Sciences 2025) and will improve or maintain habitat to flows approaching 3000 cfs (Ecosystem Sciences 2025). Restored instream flows in the Shoshone Reach will increase wetted habitat area for fish and macroinvertebrates and will maintain pool depths that provide important cover and refugia in the Shoshone Reach, which, based on these corroborating studies, will promote increased fish abundance and enhanced angling opportunities for Quality Trout.

4. Colorado River System Assessment

In addition to benefitting the natural environment within the Shoshone Reach, the proposed acquisition will provide benefits throughout the Upper Colorado River by providing a call that maintains the historic flow regime and will continue to support the quality of fisheries. The following sections describe the benefits provided by the Shoshone water rights beyond the benefits to the Shoshone Reach.

4.1 Upper Colorado River Wild and Scenic Reach

Four segments of the Colorado River from Kremmling to No Name Creek in Glenwood Canyon (Map 2) were identified by the Bureau of Land Management (BLM) and U.S. Forest Service White River National Forest (WRNF) as eligible for inclusion in the Wild and Scenic Rivers system due to their Outstandingly Remarkable Values (ORVs). ORVs are unique or exemplary river-related values highlighted for protection for future generations. Within the Colorado River, the specific values include fishing, boating, scenic viewing, hiking, and geological features. The Wild and Scenic designation comes with protections from significant future channel and streamside development and can include federally-held water rights. Due to competing water needs and development in the Colorado River, a stakeholder group was formed to develop a plan to protect and enhance these values in lieu of a federal Wild and Scenic designation. The Upper Colorado River Wild and Scenic Stakeholder Group (SG) includes both east and west-slope water providers, local interests, environmental groups, and state agencies. The SG adopted a Wild and Scenic alternative management plan with the goal of protecting the ORV's without limitations imposed by the federal designation and water right. CPW is a cooperating agency in the SG Plan and participates in large part because the fishery in the Colorado River between Kremmling and Glenwood Springs is an important recreational asset with a high number of Quality Trout markers, high biomass, and high usage, the foundation of the Fishing ORV. CPW's fishery management goals include managing for desirable species of Brown Trout, Rainbow Trout, Mountain Whitefish, Bluehead Suckers, Flannelmouth Suckers, Roundtail Chub, sculpin, Speckled Dace, and Cutthroat Trout. Long-term fishery monitoring sites were established by CPW in 2008 throughout the Upper Colorado River Wild and Scenic reach to monitor fish population metrics and ensure that the Fishing ORV is protected (Map 3).

A key component of the SG Plan is "Long-Term Protection Measures" identified by the SG to provide for significant protection of the ORVs. The SG Plan specifically identifies the Shoshone water rights as critical to maintaining streamflows and protecting the ORVs in the Colorado River by calling water through the upstream Wild and Scenic segments to the power plant. According to the SG Plan, "this administrative call generally results in stream flow through the subject stream segments in amounts greater than would exist in the absence of the administrative call." Securing ISF water rights decreed to the CWCB was another key component to protecting ORVs on the Colorado River between Kremmling and Dotsero. In 2013, three ISF reaches were appropriated by CWCB on the Colorado River between the Blue River and the Eagle River confluence. CPW was involved in the quantification of these ISF segments and their associated flow rates. In addition to helping maintain flow-related ORVs,

the senior call by the Shoshone water rights helps to satisfy the CWCB's ISF rights, which are junior in priority. Maintaining adequate streamflows is crucial for supporting streamflow-influenced ORVs, specifically recreational fishing, floatboating, wildlife, botanical, and scenic qualities.

Table 4: Decreed ISF rights in the Wild and Scenic reach of the Colorado River

| Segment | Decreed flow rates (cfs) | Priority Date |
|--|---|---------------|
| Colorado River between Blue River and Piney River | 750 cfs (8/1 - 9/15) 500 cfs (9/16 - 5/14) 600 cfs (5/14 - 7/31) | 07/12/2011 |
| Colorado River between Piney River and Cabin Creek | 800 cfs (8/1 - 9/15) 525 cfs (9/16 - 5/14) 650 cfs (5/15 - 7/31) | 07/12/2011 |
| Colorado River between Cabin Creek and Eagle River | 900 cfs (5/15 - 6/15) 800 cfs (6/16 - 9/15) 650 cfs (9/16 - 5/14) | 07/12/2011 |

4.2 Temperature Exceedances

Maintaining adequate seasonal streamflows is not only crucial for preserving ORVs but also plays a significant role in regulating water temperature. The Upper Colorado River's water temperature is influenced by seasonal precipitation, ambient air temperature, and flow conditions. The river flowing downstream from higher to lower elevation climates influences the natural warming trend from Kremmling to Glenwood Springs, with peak runoff periods temporarily moderating temperature differences along the stream gradient with high snowmelt flow volumes. During late summer and early fall, heat accumulation becomes more pronounced, particularly during low flow periods and when upstream reservoir releases are minimized. According to data reported annually by the SG, acute temperature standard exceedances did not occur between 2021 and 2025, as measured by the Daily Maximum (DM) temperature. However, chronic temperature standards exceedances (maximum weekly average temperature, MWAT) are a recurring issue across wet, dry, and average year-types during summer months. In 2023, an average water year, exceedances of the chronic temperature standard occurred upstream near Catamount and Red Dirt Creek beginning in early August and chronic temperature exceedances in Glenwood Canyon persisted for 3 to 4 weeks. In 2024, a wet water year, chronic temperature standard exceedances returned at Catamount and extended downstream through Glenwood Canyon from July through August, enduring for 2 to 3 weeks between Catamount and Red Dirt Creek and extending nearly 6 weeks from Dotsero to Glenwood Springs. Chronic temperature exceedances indicate repeated and extensive thermal stress is occurring in coldwater fishes during the summer months. Additional stresses such as hooking and handling stress from anglers or sediment

caused by monsoonal rain events, can create compounding impacts to fish health and mortality.

In 2010, CDPHE identified a reach of the Upper Colorado River from Kremmling to the Roaring Fork River on Colorado's Section 303(d) List of Impaired Waters due to repeated temperature exceedances that impair Aquatic Life Use (CDPHE Regulation #93). CDPHE identifies this segment at the lowest level of attainment, #5 - Impaired without a Total Maximum Daily Load (TMDL) plan, thus it has been a High Priority for TMDL development. In December 2024, CDPHE finalized Regulation #33 to create distinct water quality standards for the Upper Colorado River Basin. Regulation #33 specifies that temperature should maintain normal diurnal and seasonal fluctuations with no abrupt changes and not increase temperature at a magnitude, rate, and duration deemed deleterious to the resident aquatic life. The regulation sets temperature standards for the segment of the Colorado River between its confluence with the Blue River and the Roaring Fork River that are an amalgamation of Coldwater Stream temperature standards similar to those developed for Tier 1 species (Brook Trout & Cutthroat Trout) and Tier 2 species (other coldwater fishes) species depending on season.

Since the temperature impairment listing, stressful summer water temperatures above 70°F for coldwater sportfish in the Colorado River have become increasingly frequent. Seasonally high water temperatures resulting from low flows and hot ambient air temperatures can cause stress that impacts fish health, spawning success, and increases disease and mortality. Sediment flows from summer monsoonal rains can amplify physical stress on fish directly through tissue abrasions on skin and gills, and indirectly by enhancing solar radiation on the turbid waters. During sustained periods when daily water temperatures peak above 70°F and fish stress, disease, or mortality is observed in areas of moderate to high angling pressure, CPW implements voluntary fishing closures informing anglers not to fish in affected river reaches to protect local coldwater sportfisheries. Mountain Whitefish appear to be the most sensitive to summer stressors as mortalities with high temperatures, handling stress, and sediment events are documented more frequently than other fishes. Furthermore, their once notable spawning runs are significantly diminished in Grizzly Creek and No Name Creek in Glenwood Canyon. These same factors affect Rainbow Trout and Brown Trout where CPW has documented disease outbreaks and physiological stress from low water and high temperatures cause ubiquitous lesions and fungal infections on unusual numbers of trout and furunculosis outbreaks in the Eagle River, a tributary in close proximity to Glenwood Canyon.

Adequate and reliable river flows associated with the Shoshone call can help maintain water temperatures for popular coldwater sportfish. When ambient air temperatures are high in the late summer, additional flows can help mitigate excessive river warming. Greater flows not only moderates temperature effects directly, but it can also increase available wetted habitat, alleviate fish crowding, which reduces stress and disease transmission, and improves river connectivity to allow fish to move to more optimal habitat conditions elsewhere. In addition to Long-Term Protection Measures identified by the SG to protect the ORVs, the SG has identified Tier 2 "Cooperative Measures" which are voluntary actions to improve stream

conditions to protect the ORVs. Strategic releases from upstream reservoirs have been implemented in recent years to supplement low flows and mitigate harmful temperatures in the Colorado River.

4.3 Anchor ice and winter temperature issues

Low flows can also affect aquatic organisms in the winter. During periods of low flow, cold temperatures can impact fish in the Colorado River. When temperatures drop well below freezing, depleted baseflows can lead to the formation of anchor ice and ice dams that impound floating ice and water and deplete downstream reaches. Anchor ice can eliminate occupiable habitat for macroinvertebrates and fish. During freeze-thaw cycles, the ice dams can break, releasing a wave downstream that scours the riverbed causing localized mortality to macroinvertebrates and fish and flushes organisms downstream. The breaking of ice dams can also pose hazards for people and infrastructure near the river. In December 2010, an ice blockage on the Shoshone power plant intake prevented diversion to the penstocks and with the dam gates frozen closed, river flows were functionally shut off in the Colorado River between Shoshone Dam and Roaring Fork River from December 14 to 16, with the exception a few tributary inputs and springs. During the extensive dewatering of lower Glenwood Canyon, a fish kill occurred at the canyon mouth near hot spring inputs, leading to documented mortalities of trout and native sculpin due to high water temperatures. Additional streamflows from the proposed acquisition will mitigate incidences like this, as well as anchor ice formation. The proposed acquisition will also supplement baseflows providing additional useable overwintering habitat for fish and macroinvertebrates.

4.4 Lower Glenwood Canyon Fishery Resources

The Colorado River downstream of the Shoshone Reach supports a thriving coldwater sport fishery comprised of Brown Trout, Rainbow Trout, and Mountain Whitefish, as well as the Three Species. Return flows from the Shoshone power plant create and maintain a diversity of habitat features that support reproduction, recruitment, and seasonal needs of resident fishes. With more consistent flows below the power plant outfall, wetted habitat fluctuates more naturally with a less altered hydrograph, and habitat is maintained and connected by gradual seasonal changes in flow. CPW fish surveys from 2021, 2023, and 2024 consistently recorded high trout numbers, particularly quality-sized trout, reaffirming that lower Glenwood Canyon is a premier fishery. Traditional riverine riffle-pool sequences support a productive macroinvertebrate and fish community where sediment transport functions are maintained. These flows sustain a resilient aquatic ecosystem that is essential for both sport fishing and native fish conservation. Two large tributaries located downstream of the power plant, Grizzly Creek and No Name Creek, provide critical spawning habitat for Rainbow Trout, Brown Trout, and Mountain Whitefish. Reproductive habitat is generally limited by the fluvial geomorphology in the mainstem river in Glenwood Canyon, so connection to tributary habitats is important. These tributaries also contribute coldwater inputs as their headwaters originate at elevations well over 10,000 feet in the Flat Tops that encompass the northern portion of Glenwood Canyon. Self-sustaining trout and whitefish populations in the Colorado River are maintained by reproduction and recruitment from coldwater tributaries. Similarly, warm and

cool-water perennial, intermittent, and ephemeral tributaries play an important role in spawning for the native Three Species. Fishing regulations implemented by CPW recommend annual spawning closures for the Colorado River in and around the tributaries of Elk Creek, Canyon Creek in Garfield County, No Name Creek, and Grizzly Creek, as the aggregations of large river fish amassing in relatively small tributary streams are easy targets for anglers. Additional flows provided by the Shoshone water rights help ensure these tributary habitats are accessible, providing critical reproductive habitat and seasonally variable river resources for resident fish. Connectivity within mainstem habitats and accessibility to tributaries are both imperative to sustaining Colorado's outstanding sportfishing opportunities and long-term persistence of native fishes.

4.5 Quality Trout and Gold Medal Fisheries

CPW manages the Colorado River for Quality Trout fishing opportunities including Gold Medal Waters. A Quality Trout is defined as a trout that exceeds 14 inches in length, contributing to a high-quality fishing experience for anglers. Designated Gold Medal Trout fisheries exhibit a high density of Quality Trout (greater than 12 trout over 14 inches per acre) and high trout biomass (greater than 60 pounds per acre) that provide the highest quality fishing experiences. The fishery in the Colorado River provides increased opportunities to capture Quality Trout and reaches that meet Gold Medal criteria are designated Gold Medal Waters. The Colorado River is designated Gold Medal in two reaches upstream of the Shoshone Reach: Fraser to Troublesome Creek and Canyon Creek in Grand County to Rock Creek. Additionally, two tributaries to the Colorado River also contain Gold Medal Waters, the Blue River and Gore Creek. The historical flow regime provided by the Shoshone call and recent efforts to introduce whirling disease-resistant Rainbow Trout support fishery enhancements that strive to meet Gold Medal metrics in Glenwood Canyon. A more recent identification of the Colorado River as a Quality Trout Water from Rock Creek downstream to Rifle signals to anglers the increased opportunity and accessibility to catch large Quality Trout in the Colorado River, including through Glenwood Canyon. Maintaining the historical flow regime in the Colorado River is essential to sustaining the existing high-quality fishery and could facilitate the return of abundant wild Rainbow Trout and push the segment between Glenwood Canyon and Rifle towards a Gold Medal designation.

4.6 Maintaining and Restoring River Connectivity

The Upper Colorado River, including the Shoshone Reach, lies in an ecoregion termed the Colorado Plateau-Wyoming Basin of the Colorado Plateau and is a specified high priority habitat in the SWAP. These larger-order rivers contain habitat features that are unavailable in smaller streams, particularly deep pools and runs, and large backwaters and floodplain areas that are inundated during high flow events. As a result, they comprise the core habitat for several native big-river fish species, though these species are also occasionally found in smaller streams (e.g., the Three Species, Bluehead Sucker, Flannelmouth Sucker, Roundtail Chub, and the federally-listed river species: Colorado Pikeminnow, Razorback Sucker, Bonytail Chub, Humpback Chub). River conditions are considered moderately or highly

impacted in many river reaches due to dams and diversions that have altered the natural hydrograph to varying degrees as snowmelt-driven peak flows are greatly reduced, as are baseflows in many cases. Additionally, dams and diversion structures function as barriers preventing upstream movement of fishes that are highly migratory species which require many miles of connected habitat to move between spawning and rearing, foraging, and overwintering habitats. These hydrological alterations, combined with channelization, bank hardening, introduction of invasive species, and other anthropogenic and climatic stressors, have degraded the condition of associated in-channel and riparian habitats. Colorado's SWAP emphasizes the protection of resources, habitat, and natural processes in these rivers. Specifically, high priority conservation actions include the securing instream flow rights, restoration and maintenance of suitable hydrological regimes, and control of invasive nonnative fish.

The Shoshone Dam disrupts the hydrologic function and river connectivity of the Colorado River, significantly impacting aquatic habitat and fish populations. Immediately upstream of the dam, the river is pooled with a flat gradient and low water velocities, leading to excessive sediment deposition and the loss of essential riffle-run sequences that characterize a healthy river. This habitat degradation diminishes macroinvertebrate productivity, reduces native sculpin habitat, and eliminates crucial refugia for juvenile fish, ultimately limiting food availability and lowering fish productivity. This lentic, highly sedimented habitat favors only the invasive White Sucker that CPW actively removes in the Colorado Basin to prevent hybridization with native Flannelmouth and Bluehead Suckers. Additionally, the dam acts as a physical barrier to upstream and downstream fish movement when diversions are occurring, and an upstream velocity barrier when closed and spilling or when bottom release gates are open. Restricting the upstream movement of fish fragments their populations and reduces access to critical spawning and rearing habitats and optimal river resources that are essential to their persistence. By altering the Colorado River's flow regime and limiting sediment transport and fish passage, the Shoshone Dam severely impacts the ecological integrity of the Colorado River surrounding Glenwood Canyon.

Within the Shoshone Reach, restoring and maintaining a more natural hydrological regime will improve fish passage. With increased water volume, drop heights will be reduced at cascades and boulder drops and downstream pool depths will be increased which increases fish passage probability. Higher flows provide increased cross-sectional habitat connectivity and wetted channel complexity, which provides alternative pathways along the channel margins when velocities in the main channel are unfavorable. Reestablishing river flows will facilitate movement for resident fish species, including desirable sportfish and the Three Species. The Three Species are endemic to the Colorado River Basin and are an important assemblage of fish for the greater Colorado River ecosystem and significant to the natural heritage of the state. Trout, whitefish, and the native Three Species will make large movements to exploit seasonally variable resources and often return to the same places to spawn. Connecting long expanses of river systems allows for nutrient cycling, fish population resiliency, and preserves genetic diversity, which is especially important within declining native species populations like those of the Three Species.

Returning natural flow conditions directly upstream of the Shoshone Dam and through the Shoshone Reach would also enhance macroinvertebrate communities and strengthen the aquatic food web that supports trout and native species populations. Macroinvertebrate surveys upstream of Glenwood Canyon indicate a stable, diverse macroinvertebrate community dominated by mayflies, caddisflies, and other pollution-sensitive taxa, signaling good water quality and nutrient cycling. Perennial flows in the Shoshone Reach could sustain a similar diverse community, ensuring a steady supply of high-quality forage for sport and native fishes alike. Furthermore, with limited riparian communities that would otherwise harbor abundant terrestrial insect food inputs for fish, aquatic macroinvertebrate drift is an essential food resource from upstream (GEI, 2025). Connected river reaches and reliable baseflows would support a thriving ecosystem, promoting fish health and population stability in the Colorado River system as a whole.

4.7 Benefits to Existing Instream Flow Reaches

The continued operation of the Shoshone call results in upstream administration that helps maintain streamflows in the upper Colorado River and many of its major tributaries. When Shoshone is calling, junior water rights are curtailed and/or reservoir replacements are made resulting in increased flows to the Colorado River headwaters and major tributaries like the Fraser, Blue, and Eagle Rivers and their tributaries. Benefits are also realized to many decreed ISF reaches held by the CWCB in the upper Colorado River Basin. The CWCB holds 350 decreed instream flow water rights upstream of the Shoshone Power Plant (CRD, 2025). In their analysis of the Shoshone water rights' impact on existing ISF reaches, CRD analyzed differences in streamflow on two ISF reaches with and without the Shoshone call using the 2024 Colorado River StateMod model. Two ISF reaches were evaluated - the Colorado River between Kremmling and State Bridge and the Eagle River between Lake Creek and Brush Creek.

Based on this analysis, there is a clear trend for both ISF reaches, which experience reduced flows absent the Shoshone call, particularly during dry years and months of August through October. The analysis showed more days when the ISF was satisfied with the Shoshone call in place. Based on CRD's analysis, the Eagle River ISF, decreed for 45 cfs in the winter and 110 cfs in the summer, would see reduced flows by 5 cfs (all years) and 7 cfs (dry years) on average absent the Shoshone call. Impacts on flows in the Colorado River at Kremmling were particularly pronounced due to compounding upstream reductions. In dry years during the months of August through October, flows at Kremmling would be reduced by 80 cfs on average if the Shoshone Water Rights were not exercised and approximately 50 cfs across all years. Under current demands absent the Shoshone call, the amount of days when the ISF reach would be met is reduced by 31% in August through October for dry years and by 19% across all months in dry years. The findings of this analysis are significant, particularly as it relates to the Colorado River near Kremmling, which has been identified by CPW as a Quality Trout Water. The Eagle River has also been identified by CPW as a Quality Trout water.

5. Conclusion & CPW Recommendation

Securing the Shoshone water rights in perpetuity is a concept that has been contemplated for decades. This proposal has broad support from a wide variety of Western Slope constituents spanning irrigation, municipal, recreational, and environmental interests. Many of these interests have also contributed financially to support the project. Permanent protection of the Shoshone water rights has been identified in a number of state-funded planning documents, including the Colorado Basin Round Table's Basin Implementation Plan(s), the Upper Colorado Wild and Scenic Alternative SG Management Plan, and the Middle Colorado River Integrated Water Management Plan. The acquisition of this non-consumptive water right aligns with CPW conservation priorities as specified in the Colorado SWAP. Overall, the corroborating studies conducted within the Shoshone Reach and knowledge-based experience of CPW's aquatic experts demonstrate that the Shoshone water right supports baseflows, habitat connectivity and habitat maintenance, and attenuates seasonally stressful conditions for important sportfish and native fishes. More consistent use of the Shoshone water rights in the Shoshone Reach for ISF purposes will provide significant preservation and improvements to natural ecological processes that support fish and macroinvertebrate communities.

It is the opinion of CPW staff that the best use of this water is to preserve and improve the natural environment at any flow rate up to 1408 cfs (the amount decreed in the senior and junior water rights). Based on hydraulic-habitat modeling, fish habitat also improves in the Shoshone Reach at flows up to at least 3000 cfs. This upper threshold is based on the upper limit of modeled flows in the hydraulic-habitat model. It is our professional opinion that flows greater than 3000 cfs also provide improvements to fish habitat by supporting geomorphic functions (e.g. moving fine sediments required for clean spawning gravels and scour and maintenance of holding habitats), supporting the aquatic food web, supporting thermal refuge areas, and creating additional fish passage pathways. Because the Shoshone Reach has been historically dewatered when the plant is operating, we believe the offered water would establish flows necessary to both preserve and improve the natural environment. Furthermore, the water right preserves the historical flow regime in the Colorado River while improving flows in the Shoshone Reach by adding additional wetted area and suitable fish habitat to a historically dewatered section of the Colorado River.

Given the demonstrated biological benefits within the Shoshone Reach, to the Colorado River headwaters and tributaries, and to the mainstem Colorado River below the power plant, CPW staff believes this acquisition will preserve and improve the natural environment and recommends the CWCB accept the interest in the acquired water. CPW believes the best use of the acquired water rights is to preserve and improve the natural environment in the Shoshone Reach of the Colorado River at any rate up to full decreed amount of 1408 cfs. Fish habitat will also be improved in the Shoshone Reach at streamflows up to at least 3000 cfs.

Photos



Photo 1: Shoshone Dam leakage during November 5, 2025 macroinvertebrate sampling event by CPW staff



Photo 2: CPW fisheries crew surveys the dewatered Shoshone Reach of the Colorado in Glenwood Canyon on October 23, 2024. (Photo Credit: K. Bakich)



Photo 3: CPW aquatic staff prepares to weigh and measure a large Brown Trout captured in an October 23, 2024 fishery survey in the dewatered Shoshone Reach on the Colorado River. (Photo Credit: K. Bakich)



Photo 4: CPW aquatic staff shows off a Rainbow Trout captured during a fishery survey on October 23, 2024 in the dewatered Shoshone Reach on the Colorado River. (Photo Credit: K. Bakich)



Photo 5: Bluehead Sucker collected October 23, 2024 during a novel fishery survey in the dewatered Shoshone Reach on the Colorado River. (Photo Credit: K. Bakich)



Photo 6: Boulder constriction in the dewatered stream in the Shoshone Reach creates a >4-foot pour-over of stream water onto a flat boulder face is insurmountable to fish moving upstream. A small constricted side channel on the left of the photo has high-velocity laminar flows that also restrict upstream fish movement. (Photo Credit: K. Bakich)

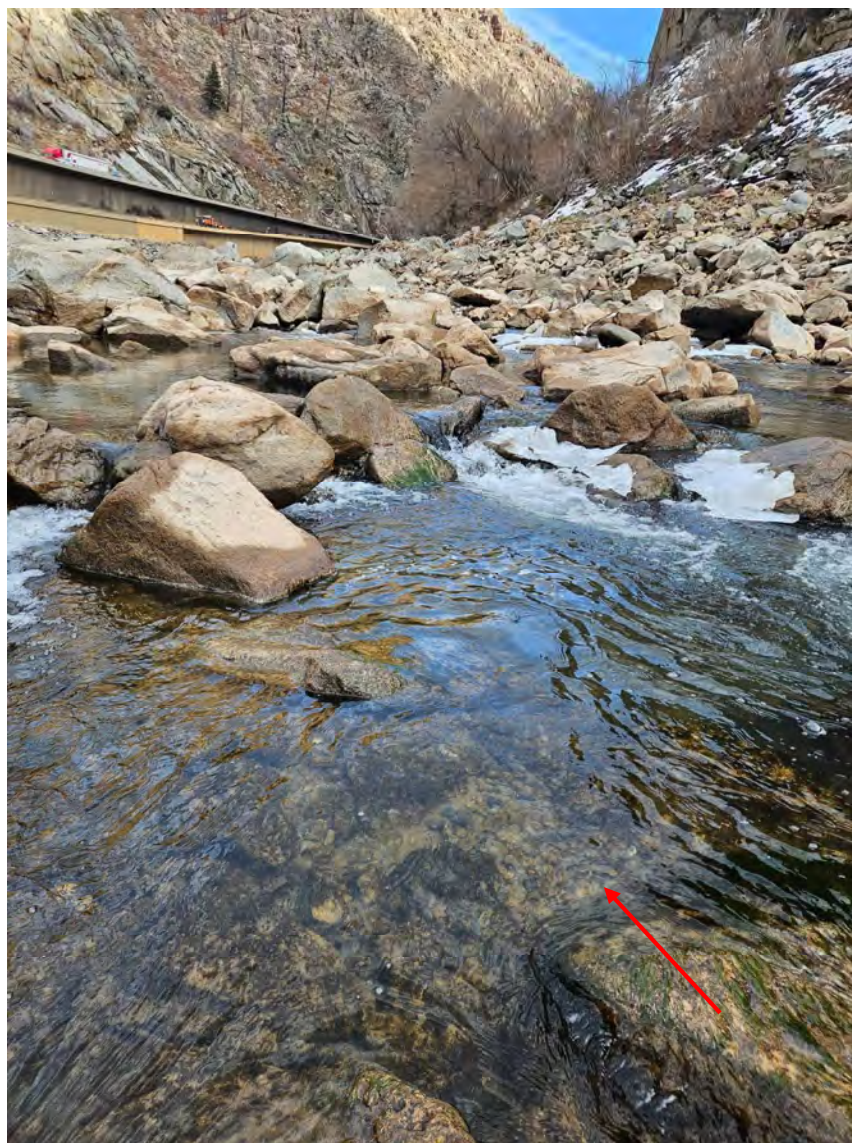


Photo 7: The red arrow points to bright, clean gravels in the Shoshone Reach of the Colorado River that are indicative of a trout redd likely created by the spawning activities of local Brown Trout during a site visit in the late fall of 2024.



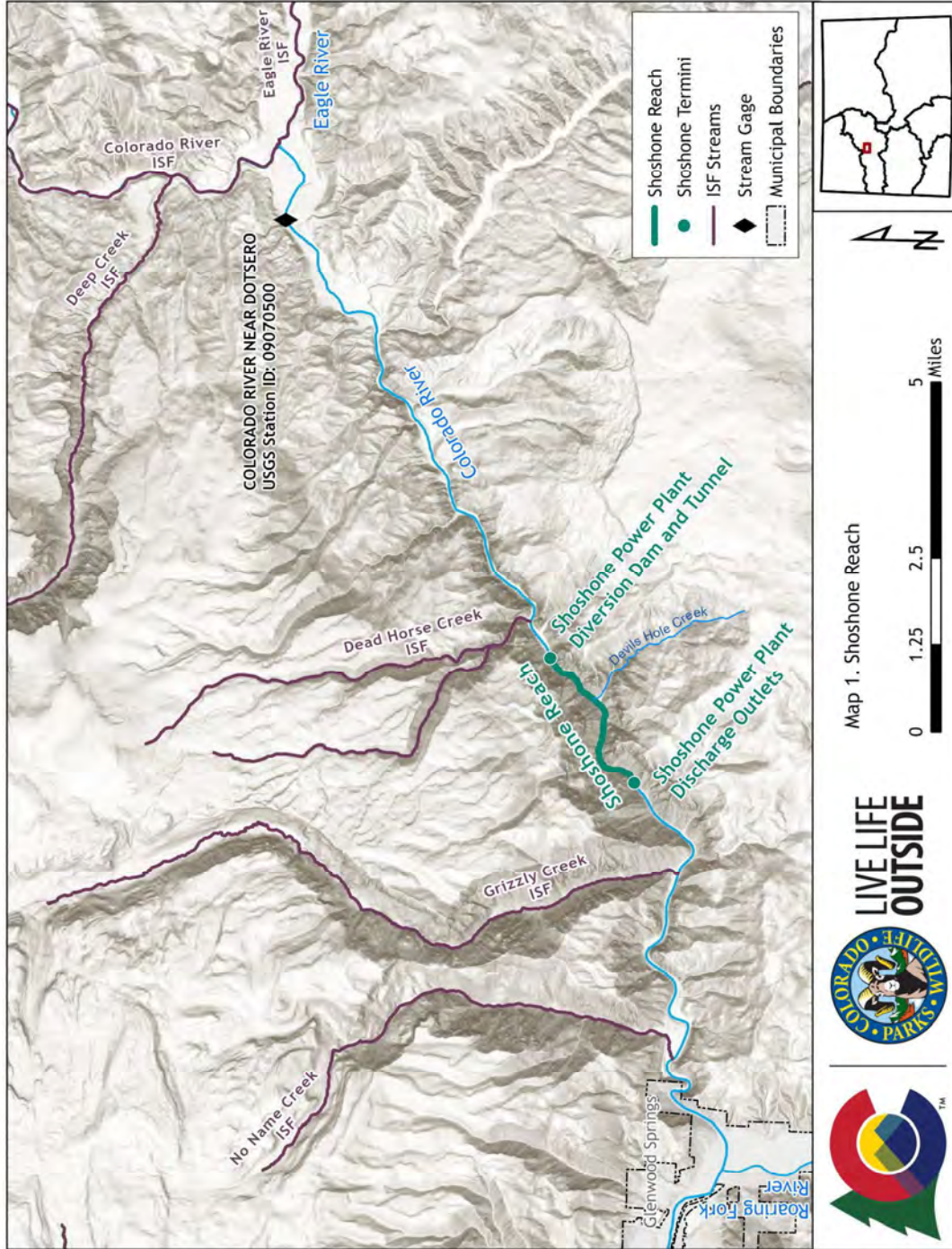
Photo 8: Low flow channel during November 5, 2024 macroinvertebrate sampling event.
(Photo credit: M. May)



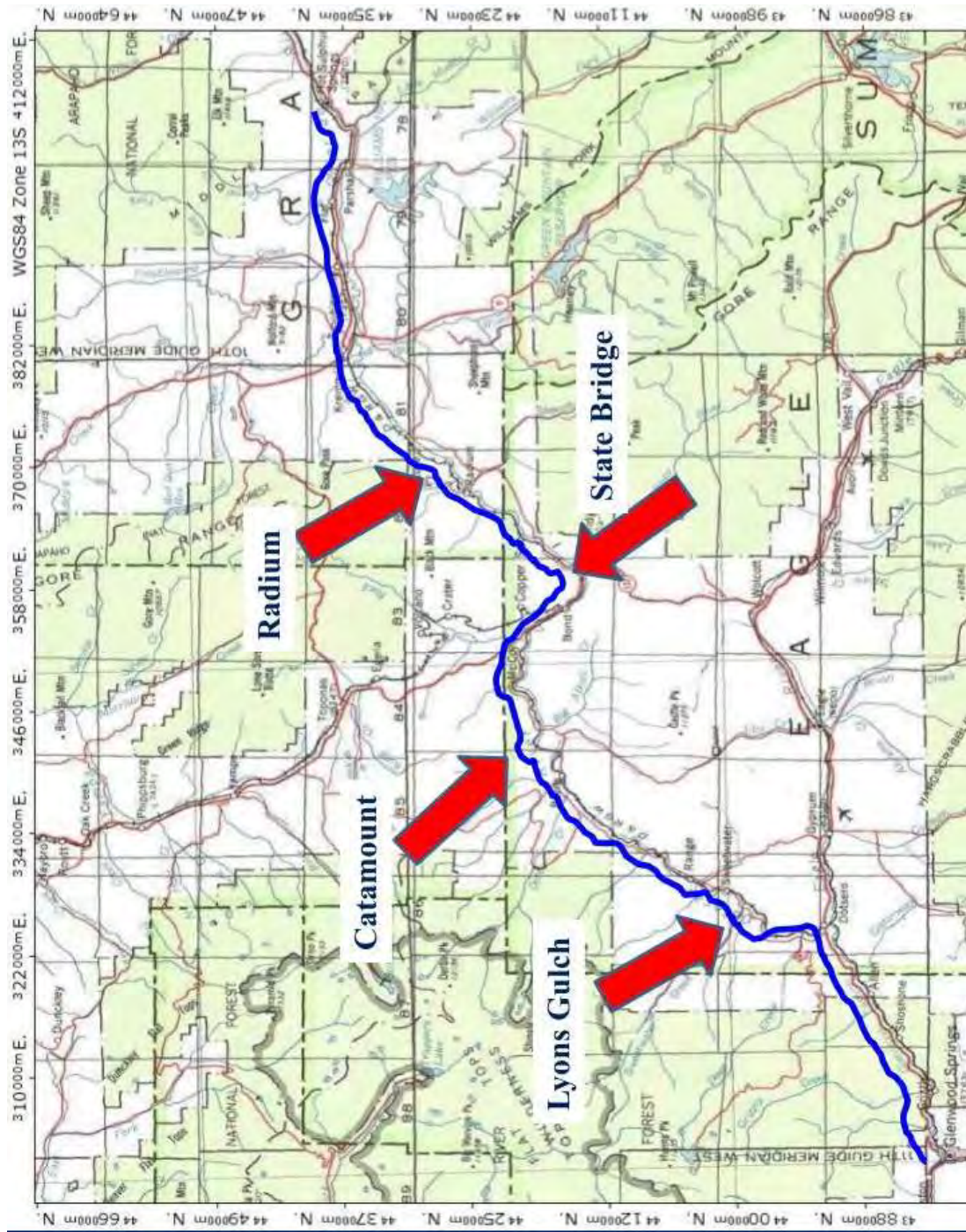
Photo 9: CPW staff collected macroinvertebrate data in the low flow channel. 11-5-2024
(Photo credit: M. May)

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Map 1. Proposed instream flow reach, the Shoshone Reach, where the Shoshone water rights will be dedicated for ISF use.



Map 3. CPW fishery monitoring sites in the Upper Colorado River Wild and Scenic stretch.



Enclosure F
Agenda Item 10.d
CWCB Board Meeting
May 21-22, 2025

COLORADO RIVER DISTRICT

PROTECTING WESTERN COLORADO WATER SINCE 1937

CRD-08
River District and PSCo May 2025
Technical Memorandum
[CWCB ISF HEARING]

To: Colorado Water Conservation Board

From: Colorado River Water Conservation District
Public Service Company of Colorado

Subject: Technical Memorandum – Proposed Acquisition of an Interest in the Shoshone Water Rights for Instream Flow Use (“Technical Memorandum”)

Date: May 6, 2025

The Colorado River Water Conservation District (the “River District”) and Public Service Company of Colorado (“PSCo”) provide this Technical Memorandum to assist the Colorado Water Conservation Board (“CWCB”) in evaluating the proposed acquisition of an interest in the Shoshone Water Rights for instream flow use.

A. **Background.**

The Shoshone Power Plant is owned and operated by PSCo (an Xcel Energy company, or “Xcel”), and produces approximately 15 megawatts of electricity—enough to serve about 15,000 customers. The Shoshone Power Plant produces hydroelectric power by means of the Shoshone Water Rights, which include the 1905 senior water right in the amount of 1,250 cubic feet per second (“cfs”), and the 1940 junior water right in the amount of 158 cfs (together, the “Shoshone Water Rights”). See Attachment 1. The Shoshone Water Rights are fully non-consumptive, so all diverted water is promptly returned to the Colorado River.

The Shoshone Power Plant diverts water from the Colorado River via the “Shoshone Diversion Dam” which is located upstream of the Shoshone Power Plant. Once water is diverted from the river at the Shoshone Diversion Dam, it is conveyed for approximately 2.4 miles through a tunnel in the canyon walls, before dropping 167 feet through two turbines and returning to the Colorado River via discharge outlets located just below the Shoshone Power Plant. See Attachment 2, Map 1. Construction of the Shoshone Power Plant began in 1906, and plant operations commenced in 1909.

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Figure 1: The Colorado River at the Shoshone Hydroelectric Power Plant



As is customary utility practice for the safe and prudent operation of a hydroelectric power plant, the Shoshone Power Plant was periodically taken offline, in full or in part, to conduct necessary maintenance over the course of its 115-year history. More recently, the power plant has been subject to more extended periods of outage arising from causes beyond PSCo's control. For example, in 2007, the power plant experienced a penstock blow-out resulting in significant damage to the powerhouse that required the plant to be offline for nearly a year. Then, in 2020, the Grizzly Creek Fire burned over 30,000 acres in Glenwood Canyon, destroying transmission lines and threatening the Shoshone Power Plant and its associated infrastructure. Subsequently, in 2021, Glenwood Canyon experienced repeated flooding and debris flow events carrying mud, rocks, and woody materials into the drainage basins of the canyon. These natural phenomena caused the Shoshone Power Plant to go offline for the majority of 2021. Most recently, the plant was offline for more than 15 consecutive months in 2023 and 2024 due to a combination of maintenance requirements and geologic hazard mitigation.

When offline, the Shoshone Power Plant does not generate power. Under these circumstances, or at times when the plant is operating at a reduced level due to issues related to one of the turbines, PSCo cannot *fully* exercise the Shoshone Water Rights. While PSCo has no current plans to cease operations at the Shoshone Power Plant, circumstances beyond its control have an increasing potential to lead to the reduction or abandonment of these important water rights. Unless the Shoshone Water Rights are available for instream flow use, increasingly frequent complete or partial outages of the plant due to natural hazards in Glenwood Canyon combined with the age of the plant are likely to lead to a reduction or complete abandonment of these important water rights. If the Shoshone Water Rights are no longer exercised, the result would be a significant and meaningful reduction in the historical flow regime of the Colorado River and its tributaries both upstream and downstream of the Shoshone Power Plant. The reduction in flow would be most significant during the late summer and early fall which are critical times of the year for the natural environment, fishery resources, recreational users, and water quality for municipal and irrigation

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uses (significant stream reductions could also occur during the winter season and in the month of April in some years).

The risk of losing the benefits provided by Shoshone’s historical flow regime remains despite the existence of the Shoshone Outage Protocol Agreement dated June 27, 2016 (the “ShOP Agreement,” Attachment 3). Under the ShOP Agreement, the signatories—including the River District, Denver Water, the Colorado Division of Water Resources, the Bureau of Reclamation, and the Northern Colorado Water Conservancy District, among others—agreed to an operational approach under which some of the signatories would release or bypass water from their respective systems during certain conditions when the senior Shoshone Water Right would normally place a call for 1,250 cfs but cannot because of an outage at the Shoshone Power Plant.¹ As a term-limited contractual arrangement, the ShOP Agreement does not and cannot provide permanent protection of the historical flow regime created by the exercise of the Shoshone Water Rights. By its express terms, the ShOP Agreement is limited to the protection of a target flow of only 1,250 cfs attributable to the senior Shoshone Water Right during the irrigation season, and the protection of only 900 cfs during the non-irrigation season, which is a reduction from what the plant can and has legally diverted and used. *Id.* at p. 5, § IV.A.2.

Thus, the ShOP Agreement acts as a temporary stop-gap measure to bring some, but not all, of the flow attributable to the Shoshone Water Rights down the river when there is a plant outage. Furthermore, the ShOP Agreement has a limited term and will expire by its own terms in 2056. Importantly, ShOP cannot be made permanent without an Act of Congress. The ShOP Agreement also has numerous limitations that “excuse” water users’ flow contributions during dry year conditions when flows attributable to the Shoshone Water Rights would otherwise provide the most benefit to the river. Moreover, the ShOP Agreement was not decreed by a state water court, so it is not binding on non-signatory water users and cannot bind new junior appropriations from diverting water that is contributed to the streamflow by ShOP participants. In contrast, the proposed instream flow agreement between the River District, PSCo, and the CWCB will result in a change of water rights decree, thereby maintaining the Shoshone Water Rights in perpetuity and, by doing so, ensuring the permanent protection of the historical flow regime of the Colorado River and its tributaries upstream of the Dotsero Gage.

B. Proposed Instream Flow Agreement.

The CWCB has authority, pursuant to section 37-92-102(3), C.R.S., to acquire the exclusive right to use the Shoshone Water Rights for instream flow purposes. The statute provides that the CWCB “may acquire . . . such water, water rights, or interests in water [] in such amounts as the board determines is appropriate for stream flows . . . to preserve or improve the natural environment to a reasonable degree.” C.R.S. § 37-92-102(3). The proposed water right dedication and instream,

¹ While not parties to the ShOP Agreement, Aurora Water and Colorado Springs-Utilities also participate in a roughly identical ShOP arrangement through separate agreements with the River District and other West Slope parties.

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flow agreement (the “ISF Agreement,” *see* Attachment 4) is consistent with the applicable statutory framework because it will provide the CWCB with the perpetual contractual interest to use the Shoshone Water Rights for instream flow purposes as further described below.

The ISF Agreement provides that the CWCB, the River District, and PSCo will file a water court application² as co-applicants to change the Shoshone Water Rights to add instream flow use by the CWCB as an additional decreed beneficial use. Following the entry of the change of water rights decree, the Shoshone Water Rights will be used by the CWCB for instream flow purposes to preserve and improve the natural environment within the reach of the Colorado River in Glenwood Canyon that extends approximately 2.4 miles from the Shoshone Diversion Dam to the Shoshone Power Plant’s discharge outlets (the “Shoshone Reach”). Such instream flow use by the CWCB will occur only to the extent the rights are not used for hydropower generation by PSCo at the Shoshone Power Plant and will be subject to the terms and conditions of the change of water rights decree.

C. The CWCB’s Acquisition of the Exclusive Right to Use Shoshone Water Rights for Instream Flow Purposes is Appropriate for Preservation and Improvement of the Natural Environment within the Shoshone Reach.

Rule 6e. of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR 408-2 (the “ISF Rule(s)”) lists the factors the CWCB shall consider in determining whether to accept an interest in water for instream flow purposes. The mandatory criteria established under Rule 6.e are separately examined below in relation to the Shoshone Water Rights. Application of these criteria to the proposed ISF Agreement clearly demonstrates that there is a natural environment in the Shoshone Reach of the Colorado River, that the CWCB’s acquisition of the exclusive right to use the Shoshone Water Rights for instream flow purposes in the Shoshone Reach is appropriate and will preserve and improve the natural environment, and that, in accordance with the water court change in use process, the use of the Shoshone Water Rights for instream flow purposes in the Shoshone Reach will not result in material injury to vested water rights.

1. *The natural environment to be preserved and improved by the CWCB’s acquisition of the right to use the Shoshone Water Rights for instream flow purposes.*

Instream flow use of the Shoshone Water Rights will occur within the Shoshone Reach, which is an approximately 2.4-mile stretch of the Colorado River within Glenwood Canyon, extending from the Shoshone Diversion Dam to the discharge outlets of the Shoshone Power Plant. The approximate locations of the upstream and downstream points of the Shoshone Water Rights are shown in **Figure 2** and are more particularly described below:

² A draft water court application for the contemplated change of water rights for the Shoshone Water Rights is enclosed hereto as Attachment 14.



ISF Upstream Terminus (Shoshone Power Plant Diversion Dam and Tunnel): located on the right bank, being the northerly bank, of the Colorado River whence the North quarter corner of Section Thirty (30), Township Five (5) South, Range Eighty-Seven (87) West of the 6th Principal Meridian bears North 23° 48' 20" East 2,414.64 feet, in Garfield County, Colorado.

ISF Downstream Terminus (Shoshone Power Plant Discharge Outlets): located on the right bank, being the northerly bank, of the Colorado River whence the Southeast corner of Section Thirty-five (35), Township Five (5) South, Range Eighty-Eight (88) West of the 6th Principal Meridian bears South 29° 24' 14" East, 1,771 feet, in Garfield County, Colorado.³

Figure 2: Proposed Shoshone Instream Flow Reach



The Shoshone Reach is within Glenwood Canyon and is confined on the right bank (north) by a pedestrian path and Interstate 70 ("I-70") and on the left bank (south) by the active Rio Grande Railroad. As described in an August 30, 2024, report prepared by Dr. William Miller, PhD, of Freshwater Consulting, LLC ("Dr. Miller"), the existing aquatic habitat of the Shoshone Reach consists of high-gradient riffles, pools, runs, and rapids dropping approximately 170 feet in elevation over the approximately 2.4-mile stretch. See "Shoshone Reach Instream Flow Habitat Data Analysis, Habitat Simulations and Habitat Evaluation of Colorado River from the Shoshone Diversion to the Shoshone Power Plant Outfall" (the "2024 Miller Report," [Attachment 5](#)). The Shoshone Reach supports multiple fish species of trout, native suckers, mountain whitefish, and sculpins as well as lower trophic level of periphyton, algae, and benthic macroinvertebrates. *Id.*

³ The legal description set forth above for the Downstream Terminus (Shoshone Power Plant Discharge Outlets) is an approximate location developed by River District staff and may be supplemented or modified at the time a water court application is filed in Water Division No. 5.

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Typical hydrology through the reach includes a high-flow runoff period with a mean peak flow of approximately 10,000 cfs in the late spring and early summer, followed by low flow conditions that can be characterized as “dewatered” during times when the Shoshone Power Plant is fully operating through the late summer and winter. During such “dewatered” periods when the plant is operating, habitat through the Shoshone Reach is connected by small inflows of groundwater and tributary streams and other sources that fill pools and flow through the large boulder and rock substrate. *See* “Shoshone Reach, Instream flow Beneficial Use and Hydraulic Habitat Suitability Assessment” (the “2025 Ecosystem Report,” [Attachment 6](#)).

In addition to the benefits provided to the Shoshone Reach when the Shoshone Water Rights are not being used for hydropower generation (or are being used only at a reduced rate), the proposed instream flow use of the Shoshone Water Rights also will provide significant benefits to the greater Glenwood Canyon riverine ecosystem. In a 2024 report jointly prepared by the United States Forest Service (“USFS”) and the Bureau of Land Management (“BLM”) titled “Biological and Recreational Resources Dependent on Colorado River Flows Through Glenwood Canyon” (the “USFS-BLM Report,” [Attachment 7](#)), the federal agencies noted, among other things, that the Shoshone Reach supports both native and sportfish species, Rocky Mountain bighorn sheep, riparian plant communities, and macroinvertebrates.

Annual fish surveys conducted by Colorado Parks and Wildlife (“CPW”) demonstrate that both native and sportfish species reside within Glenwood Canyon, including within the Shoshone Reach. As observed by CPW staff, the variable riverine topography in Glenwood Canyon includes riffles and runs that provide spawning habitat, pools, and refuge from high flows for fish species. Native fish species within Glenwood Canyon include the Flannelmouth Sucker, Bluehead Sucker, Roundtail Chub, Colorado River Cutthroat Trout, Sculpin, and Dace. Sportfish species include Brown Trout, Rainbow Trout, Cutthroat Trout, Rainbow-Cutthroat hybrids, and Mountain Whitefish.

Macroinvertebrate populations play a crucial role in the food web supporting native fish species and serving as a health indicator for aquatic and riparian ecosystems. The USFS-BLM Report notes that within Glenwood Canyon, macroinvertebrate species, which include the crucially important EPT taxa (mayflies, stoneflies, and caddisflies), provide a food source for fish, bird, and bat species. *See id.* ([Attachment 7](#)).

Although the canyon walls and man-made infrastructure within Glenwood Canyon limit the extent of riparian vegetation and terrestrial habitat, such vegetation nevertheless exists within the canyon, including narrowleaf cottonwood, chokecherry, red-osier dogwood, box elder, willow, wild rose, skunkbush, riparian grasses, sedges, and rushes. The existing vegetation in Glenwood Canyon provides habitat and food sources for terrestrial and aquatic species, bank stabilization and armoring, and river cover and shading. *See id.*

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When the Shoshone Power Plant is operating, water is returned at the plant's discharge outlets (*i.e.*, the Downstream Terminus of the Shoshone Reach) creating high quality and diverse habitat for aquatic species with an abundance of riffles, runs, and pools. In particular, the increased number of riffles support macroinvertebrate productivity and robust fishery. The return flows also benefit the natural environment downstream of the Shoshone Reach by contributing enough flow to the river for effective sediment transport, an important component of aquatic ecosystem functions. Trout, native Sculpin, and Mountain Whitefish are especially benefited by the conditions maintained by the return flows attributable to the Shoshone Power Plant, as these species prefer high gradient reaches with increased sediment movement. *See id.*

Finally, the majority of Glenwood Canyon is part of the White River National Forest ("WRNF") and is managed by the USFS, in partnership with the Colorado Department of Transportation ("CDOT"). *Id.* In addition to its regionally significant natural environment, Glenwood Canyon is notable for its scenic river corridor, which supports a robust riverine ecosystem while drawing significant human visitors for recreational and other tourism purposes.

2. *The natural flow regime.*

Beginning at its headwaters in Grand County, the Colorado River flows through the State of Colorado generally in a westerly direction for approximately 300 miles, initially traveling through remote mountainous landscapes before descending into the lower elevations of Colorado's West Slope and the Colorado Plateau.

The flow of the Colorado River within Colorado is governed by seasonal snowmelt from the Rocky Mountains, which contributes to the total volume and timing of the streamflow each year. Streamflow in the mainstem of the Colorado River varies significantly on an annual and seasonal basis due to natural variations in hydrology and the impacts of water diversion and storage projects, including 100% consumptive transmountain diversions ("TMDs") from the Colorado River and its headwater tributaries. The river's flow typically peaks in the late spring and early summer months as mountain snow melts and runs off into the river system. During late summer and fall, the flow generally decreases, reflecting the reduced snowmelt and the demands from water diversion projects in the latter, drier part of the water year. Peak spring runoff flows at the Dotsero Gage range from approximately 2,000 to 22,000 cfs with winter base flows generally measured near 900 cfs. The average streamflow recorded at the USGS stream gage on the Colorado River near Dotsero, Colorado (the "Dotsero Gage," USGS 09070500) for the years 1942–2024 is approximately 2,142 cfs, although the annual average amount fluctuates significantly from year-to-year.

Several significant water systems and projects regulate and alter the flows of the mainstem of the upper Colorado River. For example, several significant diversion projects on the West Slope, including TMDs associated with the Colorado-Big Thompson Project, Moffat Tunnel, Roberts Tunnel, the Continental-Hoosier Project, and the Homestake Project, export water from the

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headwaters of the Colorado River and its tributaries across the Continental Divide to Colorado's Front Range for municipal, industrial, and agricultural purposes. These TMDs generally consist of a series of tunnels, reservoirs, and pipelines that transport an average 482,200 acre-feet ("AF") of water annually from the Colorado River Basin for use on the East Slope. *See Attachment 2, Map 2.*

Streamflow for the mainstem of the upper Colorado River is measured and the Shoshone Water Rights are administered by the Colorado Division of Water Resources at the Dotsero Gage. The Dotsero Gage is located approximately 8.5 miles upstream of the upper terminus of the Shoshone Reach (*i.e.*, the Shoshone Diversion Dam).

3. *Instream flow use of the Shoshone Water Rights will not result in material injury to existing decreed water rights.*

To be used for instream flow purposes, the Shoshone Water Rights must first be changed by the Division 5 Water Court to add instream flow as an additional decreed use. The CWCB's subsequent use of the Shoshone Water Rights for instream flow purposes will not result in material injury to existing decreed water rights because the change of water rights decree will ensure that instream flow use will only be exercised consistent with historical practice and will include terms and conditions that prevent any injury to other water rights.

The purpose of a change of water rights proceeding is to ensure that use of the water right for the changed purpose does not result in injury to other vested water rights—both upstream and downstream of the subject water right. *See C.R.S. § 37-92-305(3)(b).* When a water right is changed to allow a different or alternate type of use, the water right retains its original priority date. *Colo. Water Cons. Bd. v. City of Central*, 125 P.3d 424, 437 (Colo. 2005). However, the "holders of vested water rights are entitled to the continuation of stream conditions as they existed at the time they first made their appropriation." *Orr v. Arapahoe Water & Sanitation Dist.*, 753 P.2d 1217, 1223 (Colo. 1988).

Under Colorado law, with respect to the determination of historical use of a water right in a change of use case, section 37-92-305(3)(d), C.R.S., provides that:

Quantification of the historical consumptive use of a water right must be based on an analysis of the actual historical use of the water right for its decreed purposes during a representative study period that includes wet years, dry years, and average years. The representative study period:

- (I) Must not include undecreed use of the subject water right; and
- (II) Need not include every year of the entire history of the subject water right.

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Importantly, the determination of injury in a change of water rights proceeding rests within the exclusive jurisdiction of the water court. *See* § 37-92-203(1), C.R.S.; *see also* § 37-92-305(3), the Division 5 Water Court will determine the historical beneficial use of the Shoshone Water Rights under their original appropriations and limit the amount of water that can be changed based on the amount of water actually and lawfully used over a representative historical period of time. Terms and conditions will be included in the change of water rights decree to ensure that no vested water rights will be injured.

4. *The historical use and historical return flows of the Shoshone Water Rights that may be available for instream flow use.*

To examine the historical use of the Shoshone Water Rights, the River District retained the services of Bishop Brogden Associates (“BBA”) to prepare an assessment of the historical use of the Shoshone Water Rights for hydropower production over a defined period of study. A copy of BBA’s Draft Preliminary Historical Use Assessment (“HU Assessment”) is attached to this technical memorandum as Attachment 8. It is important to note that the HU Assessment is, as the title implies, a preliminary draft assessment of the historical yield of the Shoshone Water Rights. The yield estimates set forth in the HU Assessment may be supplemented or changed in the future as more information and data become available. That said, the estimated yield of the Shoshone Water Rights as described in the HU Assessment is reasonable and well-supported across a sufficiently representative study period.

As discussed above, the quantification of the historical use of the Shoshone Water Rights is a “water matter” that is within the exclusive jurisdiction of the Division 5 Water Court. Therefore, the water court will determine the historical use as an integral part of the change of use case. However, the ISF Rule 6.e provides that the CWCB should consider the “historical consumptive use and historical return flows” of the water rights to be changed to add instream flow use.

The use of water at the Shoshone Power Plant is non-consumptive, which means that all of the water diverted at the Shoshone Diversion Dam and runs through the turbines to generate power is returned to the Colorado River at the outfall of the Shoshone Power Plant, approximately 2.4 miles downstream of the dam. However, the historical exercise of the Shoshone Water Rights with respect to the 2.4-mile Shoshone Reach is almost entirely depletive (there are some losses and sluicing operations associated with the historical exercise that return to the Colorado River within the Shoshone Reach) before essentially 100% of the diversions are returned to the river at the Shoshone Power Plant outfall. Although this situation is different from circumstances where a partially consumptive water right, such as an irrigation water right, is changed to a different type of use, the underlying legal principle is the same—an analysis is conducted to determine the “measure” of the water right to be changed and to make sure that other water users are not injured, including downstream junior users that have come to rely upon the return flow pattern from the historical exercise of the changed water right.

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5. *Instream flow use of the Shoshone Water Rights will preserve and improve the natural environment to a reasonable degree.*

Protecting the Shoshone Water Rights by adding an additional beneficial use for instream flow purposes to the decreed uses will preserve and improve the natural environment of the Shoshone Reach to a reasonable degree. The River District engaged Dr. Miller, and Ecosystem Sciences, Inc. (“Ecosystem Sciences”) to evaluate the habitat within the Shoshone Reach. The respective conclusions reached by Dr. Miller and Ecosystem Sciences are set forth in the 2024 Miller Report ([Appendix 5](#)) and the 2025 Ecosystem Report ([Appendix 6](#)). The key findings of both reports are summarized below.

a. 2024 Miller Report.

Using the Instream Flow Incremental Methodology (“IFIM”) on a study area within the Shoshone Reach and habitat criteria for one native fish species and three sport fish species, Dr. Miller found that flows between 700 cfs and 3,000 cfs provide a benefit to the aquatic habitat for identified fish species within the Shoshone Reach. *See Attachment 5.* Dr. Miller’s analysis of a range of flow that is bounded at 3,000 cfs on the upper end is due to the fact that the Shoshone Water Rights can call for natural flow up to 1,408 cfs to satisfy the plant’s demands. However, during naturally low flow periods additional water that is released from reservoirs located upstream of the Shoshone Power Plant may be commingled with the water needed to satisfy the power plant’s call on the river, resulting in total flows, as measured at the Dotsero Gage, in excess of the 1,408 cfs that may be diverted at the Shoshone Diversion Dam. *Id.* at pp. 9-10.

As set forth in the 2024 Miller Report, Dr. Miller concluded that future instream flow use of the Shoshone Water Rights will result in more stable baseflows and more consistent wetted area in all year types (*i.e.*, wet, dry, and average years), which would not only improve habitat availability in the Shoshone Reach, but would also support conditions for algae and macroinvertebrate growth, which are critical food sources for fish species, including the four fish species examined by Dr. Miller. *See id.* at pp. 33-34. Dr. Miller noted that the contemplated future instream flow scenario “would provide a substantial increase in habitat and benefit aquatic biota during summer, fall, winter, and early spring as compared to the existing conditions.” *Id.*

Notably, the proposed ISF Agreement provides that PSCo would be permitted to continue using the Shoshone Water Rights for hydropower purposes until such time that PSCo determines to cease generating power or the plant is permanently decommissioned. *See Appendix 5.* PSCo’s continued hydropower use will mirror or continue the historical reduction of flow within the Shoshone Reach. However, Dr. Miller nevertheless concludes that the new instream flow use of the Shoshone Water Rights would still provide significant benefits to habitat within the Shoshone Reach at all times when the Shoshone Power Plant is not operating due to normal maintenance or unplanned outages up to the evaluated flow of 3,000 cfs measured at Dotsero. *See Appendix 5* at p. 33; *see also* 2025

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Ecosystem Report, Appendix 6, at p. 33 (Dr. Miller’s conclusion here is supported by Ecosystem Sciences, which studied a different stream segment and different streamflow regimes.)

In sum, the 2024 Miller Report concludes that future instream flow use of the Shoshone Water Rights would preserve and improve the natural environment in the Shoshone Reach for the following reasons:

- The instream flow use would result in stable base flow conditions with no zero-flow days.
- The instream flow use would produce stable wetted area within the Shoshone Reach during late summer, fall, winter, and spring, creating better conditions for macroinvertebrates and algae, which are important food sources for fish species.
- Average year hydraulic-habitat conditions in summer and winter would experience improved base flows that provide between 81% to 99% of the potential maximum hydraulic habitat in the Shoshone Reach.
- The instream flow use would continue a long-list of indirect benefits upstream and downstream of the Shoshone Power Plant due to water “called-down” to the Shoshone Reach to satisfy the instream flow use of the Shoshone Water Rights.
- Flows transported through the Shoshone Reach as a result of the instream flow use of the Shoshone Water Rights would preserve stream conditions within the reach while simultaneously improving the aquatic habitat.

See generally Appendix 5 at pp. viii, 33.

b. 2025 Ecosystem Report.

The 2025 Ecosystem Report (Attachment 6) builds on and supports the conclusions in the 2024 Miller Report. However, in contrast to Dr. Miller’s approach which relied on a comparison between the existing flow regime and a future flow regime created by the additional instream flow use of the Shoshone Water Rights, Ecosystem Sciences utilized the 2024 Upper Colorado River Basin Model (“UCRM”) in StateMod to evaluate and compare a range of current and future scenarios. The future scenarios utilized by Ecosystem Sciences accounted for additional Colorado River demands intended to reflect future development on the Colorado River. Ecosystem Sciences used an additive method (as opposed to Dr. Miller’s multiplied method) to determine Hydraulic Habitat Suitability from the modeled velocity and depth variables across each site. Despite the different methods used to assess stream habitat, both reports arrived at the same conclusion—instream flow use of the Shoshone Water Rights will preserve and improve the natural environment within the Shoshone Reach at measured flow rates up to 3,000 cfs.

It is worth noting that the 2024 UCRM upon which Ecosystem Sciences’ analysis relies also yielded important information regarding the influence that the Shoshone Water Rights have on the Colorado River mainstem. In fact, outputs from the State of Colorado’s 2024 UCRM clearly demonstrate that, if the Shoshone Water Rights are not exercised, approximately 31,900 AF to

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35,500 AF less water would flow through the Shoshone Reach (under average existing and future dry-year conditions, respectively) than occurs when compared to the StateMod’s “baseline” condition (which includes exercise of the Shoshone Water Rights).⁴

Ecosystem Sciences studied two sites—one of which was studied in the 2024 Miller Report—within the Shoshone Reach, which together cover approximately 29% of the reach. *See Attachment 6* at p. 1. Through its investigation of these two study areas, Ecosystem Sciences concluded that the hydraulic habitat suitability for the same native and sport fish species examined in the 2024 Miller Report would be higher more frequently under a future scenario where the Shoshone Water Rights are permanently protected as compared to a current baseline scenario and a future scenario where the Shoshone Water Rights are not permanently protected by the addition of instream flow use. *See id.* at p. 33. This is particularly true during late summer and early fall seasons. *Id.* The protection of the Shoshone Water Rights through instream flow use also would provide significant help to address high temperatures and other stressors experienced in the Shoshone Reach and upstream reaches. In these respects, Ecosystem Sciences’ analysis confirmed Dr. Miller’s earlier findings and similarly found that instream flow use of the Shoshone Water Rights will preserve and improve the natural environment of the Shoshone Reach to a reasonable degree at measured flow of up to the evaluated 3,000 cfs at the Dotsero Gage. *See id.* at p. 34.

Another important series of findings in the 2025 Ecosystem Report deals with the reality that flows within the Shoshone Reach are highly variable throughout the year. *Id.* at p. xx. For instance, on days when the Shoshone Power Plant is operational, water is diverted at the Shoshone Diversion Dam (*i.e.*, the ISF Upstream Terminus) for hydropower production and the same diverted water is later returned to the river at the outfall of the power plant (*i.e.*, the ISF Downstream Terminus). During periods when the Shoshone Water Rights are placing an administrative call against upstream junior water rights (*i.e.*, when the natural flow at the Dotsero Gage is less than 1,408 cfs), river flow within the Shoshone Reach will be less than 1,408 cfs and may, at times, have virtually zero flow. Despite these conditions—which result in a partially “dewatered” Shoshone Reach during plant operations—Ecosystem Sciences arrived at the same conclusion as did Dr. Miller:

During seasonal low flow periods the reach is dewatered when the plant is operating, though habitat in the Shoshone Reach is connected by small inflows of groundwater and tributary streams that fill pools and flow through the large boulder and rock substrate [] Habitat persists even during low flow periods, though wetted area in the stream channel is substantially reduced; however, habitat becomes fragmented for upstream fish movement at low flows.

See id. at p. 4.

⁴ These outputs derive from the State of Colorado’s 2024 UCRM baseline model, which is accessible at <https://cdss.colorado.gov/modeling-data/surface-water-statemod>.

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The key conclusions of the 2025 Ecosystem Report indicate that instream flow use of the Shoshone Water Rights will preserve and improve the natural environment in the Shoshone Reach by: (1) sustaining aquatic habitat; (2) fostering stream connectivity; (3) supporting primary and secondary production; (4) regulating stream temperatures; (5) maintaining habitat complexity; and (6) improving the availability of critical refuges for fish species, particularly during seasonal low-flow periods. *Id.* at p. 33. In addition to the specific preservation and improvement benefits observed within the Shoshone Reach, Ecosystem Sciences also concludes that instream flow use of the Shoshone Water Rights “play a significant, though indirect, role in maintaining the health and function of the ecosystems along the Colorado River” by preserving “flows necessary to support upstream and downstream ecosystems”. *Id.* at pp. 10, 34. Please refer to the below discussion in Section 12.b. for a summary of these ancillary benefits.

In summary, the 2024 Miller Report and 2025 Ecosystem Report conclude that protecting the historical flow regime by adding instream flow use to the Shoshone Water Rights will preserve and improve the natural environment of the Shoshone Reach to a reasonable degree.

6. *The location of other water rights on the subject stream.*

There are no decreed diversionary or instream flow water rights located within the Shoshone Reach between the Shoshone Diversion Dam and the outfall of the Shoshone Power Plant. However, there are several decreed appropriative rights of exchange that can exchange against the natural flow measured at the Dotsero Gage except at times that the Shoshone Water Rights are calling pursuant to their respective administrative priorities. In addition, there are, of course, thousands of individual water rights located on the Colorado River mainstem and its tributaries upstream and downstream of the Shoshone Reach.

7. *The effect of the acquisition on any relevant interstate compact issue.*

The 1922 Colorado River Compact and the 1948 Upper Colorado River Compact allocate the beneficial consumptive use of water amongst the applicable basins (with respect to the 1922 Compact) and the states (with respect to the 1948 Compact). The proposed instream flow use of the Shoshone Water Rights will replicate the historical use of the water rights for non-consumptive hydropower generation that has existed for more than 100 years. Thus, the use of the Shoshone Water Rights for instream flow purposes will not result in delivering more water than required under compact obligations because there will be no change from the historical exercise of the Shoshone Water Rights for non-consumptive beneficial use. And consequently, maintaining the Shoshone Water Rights as proposed in the ISF Agreement will not impact the State of Colorado’s remaining compact entitlement.⁵

⁵ As part of the River District’s decades-long effort to protect the historical Shoshone flow regime, the River District and other West Slope entities have negotiated comprehensive settlement agreements with Aurora Water and Colorado Springs Utilities (together, the “Cities”). Those agreements provide, in part, that the Cities will not oppose the instream

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8. *Instream flow use of the Shoshone Water Rights will support the maximum utilization of the waters of the State of Colorado.*

The use of the Shoshone Water Rights for instream flow purposes will promote the maximum utilization of the waters of the state. Preservation and improvement of the natural environment to a reasonable degree are beneficial uses of water recognized under Colorado law. *See* C.R.S. § 37-92-102(3). Ensuring the future exercise of the Shoshone Water Rights through a change of water rights proceeding to add an alternate use for instream flow purposes will protect the historical flow regime on the mainstem of the Colorado River, upon which many critical water uses and environmental benefits depend. For instance, meeting the demands of the Shoshone Water Rights by administering a call for 1,408 cfs, consistent with historical practice, facilitates efficient water delivery operations in the Grand Valley during low flow periods, while simultaneously ensuring that aquatic habitats and ecosystems are protected.

The instream flow use of the Shoshone Water Rights will provide the continued use of a 115-year-old water right. The non-consumptive nature of the historical use and the proposed instream flow use means that the water used by the Shoshone Water Rights will continue to be made available for appropriation for consumptive purposes after it has been put to beneficial use for instream flow use, thus promoting multiple uses and maximum utilization of the state's water resources.

In addition, the continued exercise of the Shoshone Water Rights supports the ongoing viability of the 15-Mile Reach Programmatic Biological Opinion ("PBO") and the broader Upper Colorado

flow use of the senior Shoshone Water Right, provided the ISF Agreement with the CWCB and the change of water right decree approved by the water court include language, requested by the Cities, that confirms the instream flow use of the senior Shoshone Water Right will be exercised in compliance with any potential rules on compact administration issued by the State Engineer that may be in effect. Notably, the CWCB has stipulated to similar language in previous water court decrees, including cases in which the CWCB was the applicant.

Inclusion of the following language in the ISF Agreement and in the eventual change of water right decree would effectuate the agreements with the Cities:

In the event of a curtailment of Colorado water rights, or an imminent threat or expectation thereof, resulting from the State of Colorado's obligations under the Colorado River Compact and/or the Upper Colorado River Basin Compact, the CWCB's exercise of the Shoshone Water Rights for instream flow purposes will be consistent with any duly adopted final rules or regulations of the State Engineer adopted for purposes of fulfillment of Colorado's commitments under either or both compacts, and that are in force, any pending appeal notwithstanding.

The River District believes that including the above language would foster and maintain comprehensive settlements between the West Slope and Front Range transmountain water users. The River District pledges to work in good faith with the State Engineer, CWCB staff, and the Attorney General's Office, as well as with the Cities, to develop language agreeable to all parties prior to the CWCB's formal decision on whether to approve the proposed ISF Agreement.

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River Endangered Fish Species Recovery Program (the “Recovery Program”). By way of example (and not limitation), the continued exercise of the Shoshone Water Rights in a manner consistent with historical practice is one of three conditions expressly set forth in the 1996 stipulation and agreement entered between the Orchard Mesa Irrigation District (“OMID”), the Grand Valley Water Users Association (“GVWUA”), and the United States Bureau of Reclamation (“Reclamation”) and other parties involved in Case No. 91CW247, District Court, Water Division No. 5 (the “Check Case”).

Pursuant to the Check Case stipulation and agreement (the “Stipulation”), assuming these three critical conditions are met, surplus water from Green Mountain Reservoir’s Historic Users Pool (“HUP”) may be quantified and delivered to the critical habitat existing within the 15-Mile Reach of the Colorado River in the Grand Valley. Notably, however, if the Shoshone Water Rights were to cease operating in a manner consistent with historical practice as described in the Stipulation, the failure to meet this condition could trigger a potential loss of the benefits that the HUP surplus water provides to all Colorado River water users within the State of Colorado. The HUP surplus deliveries have averaged approximately 32,000 AF per year, with most deliveries occurring in the critical flow months of August through October. In other words, the continued viability of the Recovery Program is necessary to provide Endangered Species Act (“ESA”) coverage for all Colorado River water users in Colorado (both in-basin and transmountain uses). Thus, the use of the Shoshone Water Rights will contribute to the maximum utilization of the state’s water resources by helping to ensure existing and future water use can occur with ESA coverage provided by the Recovery Program. The attached memorandum (“Check Case Memo”) prepared by respective counsel for the River District, OMID, and GVWUA provides a more in-depth overview of the Check Case and the criticality of preserving the Shoshone Water Rights to the Stipulation and the Recovery Program. A copy of the Check Case Memo, initially prepared as part of the River’s District’s federal funding application, is attached hereto as Attachment 9.

9. *Whether the water will be available for subsequent use or reuse downstream of the Shoshone Reach.*

The provisions of §§ 37-92-102(3) and 305(3)(b), C.R.S., that require all contracts or agreements for interests in water, and the water court decree implementing the contracts or agreements, to state the CWCB or the lessor, lender, or donor may bring about beneficial use of the historical consumptive use of the leased, loaned, or donated water right downstream of the instream flow reach as fully consumable water are not relevant and do not apply to this acquisition. With respect to the Shoshone Water Rights, the historical exercise of such rights has been entirely non-consumptive, and because the instream flow will mimic the historical non-consumptive operation of the plant there is no associated impact to consumptive use or reuse claims downstream.

10. *The cost to complete the acquisition of the Shoshone Water Rights for instream flow purposes.*

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In December 2023, the River District signed a Purchase and Sale Agreement (the “PSA,” Attachment 10) with PSCo to acquire and permanently protect the Shoshone Water Rights for \$99 million. The fundamental purpose of the PSA is to establish the CWCB’s legal ability to use the Shoshone Water Rights for ISF use in a manner that mimics the historical use of the water rights for hydropower generation to protect the historical flow regime while preserving and improving the natural environment. Contemporaneous with the signing of the PSA, the River District’s Board of Directors committed \$20 million towards the total purchase price. Then, on January 29, 2024, the CWCB voted unanimously to recommend a \$20 million investment, subject to specified pre-conditions, to help finance the acquisition. Colorado’s General Assembly subsequently approved the CWCB’s contribution through the 2024 Water Projects Bill (HB24-1435) with broad bipartisan support. As of the date of this memorandum, 30 water entities, local governments, and regional partners have formally committed over \$17 million to finance the acquisition of the Shoshone Water Rights per the PSA. Additional funding contributions are expected based on conversations with other supporters. **Table 1** below includes local funding commitments to date:

| Table 1: Local Funding Commitments (as of 05/05/2025) | |
|--|------------------------|
| Garfield County | \$3 million |
| Eagle County | \$2 million |
| City of Glenwood Springs | \$2 million |
| Ute Water Conservancy District | \$2 million |
| Eagle River Water and Sanitation District and Upper Eagle Regional Water Authority | \$1 million |
| Grand County | \$1 million |
| City of Grand Junction | \$1 million |
| Mesa County | \$1 million |
| Summit County | \$1 million |
| Pitkin County | \$1 million |
| Colorado Mesa University | \$500,000 |
| Clifton Water District | \$250,000 |
| Grand Valley Irrigation Company | \$250,000 |
| Basalt Water Conservancy District | \$100,000 |
| Grand Valley Power | \$100,000 |
| Grand Valley Water Users Association | \$100,000 |
| Middle Park Water Conservancy District | \$100,000 |
| Town of New Castle | \$100,000 |
| Orchard Mesa Irrigation District | \$100,000 |
| City of Rifle | \$100,000 |
| Snowmass Water & Sanitation District | \$100,000 |
| Town of Silverthorne | \$100,000 |
| Mesa County Irrigation District | \$50,000 |
| Palisade Irrigation District | \$50,000 |
| West Divide Water Conservancy District | \$50,000 |
| Kobe Water Authority | \$25,000 |
| Town of Parachute | \$25,000 |
| De Beque Plateau Valley Soil Conservation District | \$5,000 |
| Town of De Beque | \$5,000 |
| Total: | \$17.11 million |

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In November 2024, the River District submitted a request for funding under the Inflation Reduction Act's Upper Basin Environmental Drought Mitigation, Bucket 2 Ecosystem ("B2E") Financial Assistance Program to the U.S. Bureau of Reclamation ("Reclamation"), requesting \$40 million to be committed towards the \$99 million purchase price. Notably, the State of Colorado's state and federal elected officials provided overwhelming support for the River District's B2E application. The River District's B2E application and an index of 58 unique letters of support that articulate the benefits of the Shoshone Water Rights to their communities and interests across the state can be [accessed at this link](#).

On January 17, 2025, Reclamation announced an award of approximately \$40 million, allowing the River District's B2E application to proceed towards negotiation of terms and conditions for a secured funding agreement. That award, like many others, is currently under review by the new administration in Washington, D.C. The River District remains optimistic that it will secure funding from the federal government and/or if necessary, through an alternate funding strategy before the end of the change of water rights case, which is the funding deadline in the PSA between the River District and PSCo.

11. *Instream flow use of the Shoshone Water Rights to preserve and improve the natural environment will be administrable by the Division Engineer.*

Following the entry of a change of water rights decree, including any necessary terms and conditions that the Water Court deems necessary, for the Shoshone Water Rights, the Division Engineer for Water Division No. 5 will be able to administer the water rights for instream flow purposes in the manner proposed by the River District, PSCo, and the CWCB. *See* C.R.S. § 37-92-301(3) (providing that the State and Division Engineers administer waters of the state in accordance with decrees adjudicated by state water courts).

12. *Additional benefits associated with the proposed acquisition.*

The exercise of the Shoshone Water Rights protects Colorado's namesake river for the benefit of numerous and diverse water users, recreation interests, and the abundant natural habitats and ecosystems that rely on the Colorado River for survival. *See* [Attachment 2](#), Map 4. And while the anticipated benefits to the natural environment of the Shoshone Reach are a necessary feature of the CWCB's evaluation of the proposed acquisition, the CWCB has the authority to consider other factors in accordance with Rule 6e. of the ISF Rules. We provide the following additional benefits of the acquisition for the CWCB's consideration.

With the assistance of Hydros Consulting, Inc. ("Hydros"), the River District and PSCo have undertaken a comprehensive investigation of the numerous ecosystem, habitat, and environmental benefits of the Shoshone Water Rights, both within and outside of the designated Shoshone Reach. Hydros' analysis is contained in two technical reports: (1) the Shoshone Power Plant Water Rights Yield Assessment, dated September 11, 2024 (the "Yield Assessment," [Attachment 11](#)), and (2)

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the Addendum to September 11, 2024, Shoshone Power Plant Water Rights Yield Assessment, dated November 7, 2024 (the “Yield Addendum,” Attachment 12).

Drawing support from the technical work performed by Hydros, some of the additional benefits afforded by the permanent protection of the Shoshone Water Rights are summarized below:

- a. Benefits to Existing Instream Flow Water Rights and Tributaries Upstream of Shoshone Power Plant.

The State of Colorado has recognized the importance of the headwaters region of the Colorado River and currently holds 350 decreed ISF water rights on the Colorado River upstream of the Shoshone Power Plant, and over 120 ISF water rights located downstream of the Shoshone Power Plant, including those on downstream tributaries to the Colorado River. *See Attachment 13*, the “ISF Benefits Memorandum,” Figure 1. The numerous ISF water rights located in the upper Colorado River watershed on the mainstem and its tributaries upstream of the Shoshone Power Plant benefit from the seniority of the Shoshone Water Rights and their ability to command flows down the Colorado River on a year-round basis. *See Attachment 2*, Map 3. If the flows attributable to the Shoshone Water Rights were absent from the upper Colorado River mainstem, river levels would be significantly lower (especially in drought years and late in the irrigation season), resulting in a negative impact on the riverine ecosystems that are already stressed by prolonged drought and aridification.

Figure 3: Major Tributaries Upstream of the Shoshone Power Plant



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The attached memorandum titled “Shoshone Water Rights Analysis on Decreed Instream Flow Reaches in the Colorado River Watershed” (the “ISF Benefits Memorandum,” Attachment 13) provides a more detailed analysis of how protecting the historical exercise and administration of the Shoshone Water Rights will benefit existing decreed ISF reaches in the Upper Colorado River Watershed. As described in the ISF Benefits Memorandum, the reduction in flow that would occur in the absence of the administration of the Shoshone Water Rights would lead to more strain on the upstream and downstream ISFs examined in the memorandum, thereby translating to fewer days when the ISFs would be satisfied. *See id.* The ISFs studied in the ISF Benefits Memorandum include tributaries as well as the Colorado River mainstem and are representative of the Shoshone Water Rights’ range of influence across the basin. *Id.* The primary conclusion of the ISF Benefits Memorandum is that the exercise of the Shoshone Water Rights supports ISF reaches upstream of the Shoshone Power Plant in meeting target flows (especially in dry years and in critical months of the later irrigation season) while having a negligible impact on tributaries downstream of the power plant, including on the Roaring Fork River. *Id.* at pp. 1-2.

b. Maintaining Streamflow through Upper Colorado River Wild and Scenic Alternative Management Plan River Sections.

The Upper Colorado Wild and Scenic Stakeholder Group (“Stakeholder Group”) was formed in 2007 following a report by BLM on the eligibility of rivers in the Upper Colorado River Basin for Wild and Scenic River designation. The BLM report identified 84 miles of the upper Colorado River from the Town of Kremmling to No Name Creek in Glenwood Canyon as having Outstanding Remarkable Values (“ORVs”) eligible for federal designation as a Wild and Scenic River. The Stakeholder Group, which includes over 20 entities (including the River District and the State of Colorado), developed an alternative plan to a federal Wild and Scenic designation with an intention to balance permanent protection of the ORVs, provide certainty for the Stakeholder Group, ensure water project yield, and provide flexibility for water users along the upper Colorado River. The Stakeholder Group’s “Alternative Management Plan” lists the continued exercise of the Shoshone Water Rights as one of four identified long-term protection measures for streamflow-influenced ORVs on the Colorado River from Kremmling to No Name Creek.⁶ The Shoshone Water Rights provide base flows through the subject river segments that support aquatic habitat, lower water temperatures, and maintain minimum boatable flows.

The USFS-BLM Report confirms the importance of the Shoshone Water Rights to the federal wild and scenic designated reaches given that flows necessary to satisfy the Shoshone Call also support fisheries for native species, sport species, and aquatic invertebrates. *See Attachment 7*, pp. 16–17. The USFS-BLM Report also identifies the foundational need for the Shoshone Water Rights to maintain wild and scenic suitability for recreation through a reach that saw approximately 150,000 boater “visitor” days in 2022. *Id.* at pp. 14, 16. The USFS-BLM Report concludes by stating

⁶ *See* Amended and Restated Upper Colorado River Wild and Scenic Stakeholder Group Management Plan (last revised July 2024), p. 63.

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“[o]peration of the [Shoshone Water Rights] supports [ORVs] in three reaches of [the] Colorado River that have been determined to be eligible for designation into the National Wild and Scenic Rivers System.” *Id.* at p. 17.

c. Recreational Benefits.

Colorado’s robust recreational economy relies heavily on the Colorado River mainstem, with flows provided by the Shoshone Water Rights strengthening the state’s iconic river recreation industry throughout Grand, Summit, Eagle, Garfield, and Mesa Counties. River recreation in Colorado is estimated to contribute \$18.8 billion annually to the state’s gross domestic product, with approximately \$4 billion coming directly from the Colorado River Basin on the West Slope. *See Attachment 2, Map 5.*⁷ As temperatures rise and streams diminish, the exercise of the Shoshone Water Rights provides security for this industry, protecting the recreational fishing and boating that sustain local businesses and attract water-based tourism.

The USFS-BLM Report estimated that in 2022 approximately 150,000 commercial and private boat recreationalists used the Colorado River between Kremmling and into Glenwood Canyon during the summer months with interest in river recreation growing each year. *See Attachment 7, pp. 14, 16.* The USFS-BLM Report goes even further to report on how flows impact recreational experiences, which shows the importance of protecting the Shoshone Water Rights that ensure higher flows are available for recreationalists above and below the Shoshone Reach:

These flow-dependent activities rely heavily on the amount of water in this stretch of the river. Based on input from the outfitters and experience, these commercial operations typically cease when river flows drop below 1,200 cfs. The floating visitor experience diminishes drastically once flows drop below this level.

Id. at p. 16.

The USFS-BLM Report also reported that outdoor recreation on BLM-administered lands in the Kremmling Field Office and Colorado River Valley Field Office contributes \$145.7 million and over 1,100 jobs annually. *Id.* at p. 14.

d. Water Quality Improvements.

Communities that rely on the mainstem of the Colorado River for their drinking water supplies benefit from the enhanced water quality provided by the exercise of the Shoshone Water Rights because the flows attributable to the Shoshone Water Rights dilute salinity and sediment. These communities can experience high treatment costs during low flow conditions when concentrations of Total Dissolved Solids (“TDS”) become elevated. Taste, odor, and color are affected when

⁷ *See Business for Water Stewardship, Economic Contributions of Water-related Outdoor Recreation in Colorado*, https://businessforwater.org/wp-content/uploads/2020/05/SA_BWS_FactSheet_Digital_CO_1PG.pdf.

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flows decrease due to the potential loss of the Shoshone Call. Without the higher flows of clean and cold headwater-sourced supplies provided by the Shoshone Call, a higher concentration of salinity and other water quality constituents creates increased costs for municipal drinking and wastewater treatment.

Clifton, the City of Rifle, and the Towns of DeBeque, Silt, Parachute, and Battlement Mesa are all West Slope communities which draw and treat water directly from the Colorado River as their primary domestic water supply. Securing the permanent exercise of the Shoshone Water Rights by including an alternate instream flow use will sustain critical flows and water levels in the Colorado River on a year-round basis, especially in dry years, thereby maintaining water quality through the dilution of pollutants and sediment naturally present in the river. The presence of sediment is of particular concern for a stretch of 103 river miles from the Colorado River's confluence with the Roaring Fork River to the confluence with the Gunnison River on the "Monitoring & Evaluation List" within Colorado's Section 303(d) List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads. While this reach is not listed for impairment, the "Monitoring & Evaluation" classification signifies there is "reason to suspect water quality problems".

e. Agricultural Benefits.

As discussed in Section C.8. above, all agricultural use (and all other consumptive uses) of Colorado River basin water within Colorado depends very significantly on the continued success of the Recovery Program. The Shoshone Water Rights are a critical piece to this puzzle because the exercise of the Shoshone Water Rights is one of the three express conditions in the important Check Case Settlement that allows a Green Mountain Reservoir Historic Users Pool surplus to be declared, released from storage, and delivered for the benefit of the endangered fish species. In many years, the HUP Surplus water is by far the single largest source of water delivered to benefit the endangered fish species—thus making it a very important component of the Recovery Program.

Additionally, the historical exercise and administration of the Shoshone Water Rights helps to support Colorado's robust agricultural economy, which is responsible for generating approximately \$47 billion annually in economic activity in Colorado.⁸ By way of example, the historical flow regime created by the Shoshone Water Rights protects and improves water quality especially in low flow periods for water users up and down the Colorado River mainstem. Agricultural producers benefit significantly from improved water quality, bringing greater agricultural production to the West Slope. High salinity levels in the Colorado River, which are expressed by the concentration of TDS, can negatively impact water use and crop yields, especially

⁸ See Legislative Council Staff, *A Snapshot of Colorado Agriculture*, Issue Brief (March 2024), https://leg.colorado.gov/sites/default/files/r23-286_agricultural_economy_in_colorado_0.pdf; see also Colorado Department of Agriculture, *The Economic Contribution of Agriculture to Colorado's Economy*, (February 14, 2020), https://drive.google.com/file/d/1ZJm_G8ng_1csUQvZw_iiMsn6DYSDjm_X/edit.

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for salt-sensitive cash crops, such as stone fruits, grapes, vegetables and seed crop production by up to 25%.⁹

f. Upper Colorado River Endangered Fish Recovery Program.

All Colorado River water users in the State of Colorado, whether located on the eastern or western side of the Continental Divide, rely upon the continued success of the Recovery Program and continued ESA compliance for streamlined permitting processes for over 1,250 water projects located in Colorado since 1988.¹⁰ As explained in Section C.8., above, one of the ways in which the continued exercise of the Shoshone Water Rights benefits water users is by ensuring that Green Mountain Reservoir's HUP "Surplus" can continue to provide water for delivery to the 15-Mile Reach as provided by the terms of the Check Case Stipulation. *See Attachment 9.*

⁹ See Colorado State University Extension, Master Gardener, *CMG Garden Notes #224 Saline Soils* (revised October 2015), <https://cmg.extension.colostate.edu/Gardennotes/224.pdf>, p. 224-1; *see also* United States Geological Survey, *State News Release: New study demonstrates how climate and irrigation influence salinity of waters in the Upper Colorado River Basin* (February 8, 2024).

¹⁰ *Id.* (detailing 1,272 projects in Colorado that have benefited from ESA Section 7 Consultations from 1988-2023).

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Attachment 4: Draft Instream Flow Agreement
Attachment 5: 2024 Miller Report
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Attachment 12: Hydros Yield Addendum
Attachment 13: ISF Benefits Memorandum
Attachment 14: Draft Water Court Application



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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Jared Polis, Governor

Dan Gibbs, DNR Executive Director

Lauren Ris, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Rob Viehl, Chief
Kaylea White, Senior Water Resource Specialist
Stream and Lake Protection Section

DATE: May 21-22, 2025

SUBJECT: 10.d Proposed Acquisition of an Interest in the Shoshone Water Rights for
Instream Flow Use on the Colorado River

I. Staff Recommendation

Pursuant to instream flow Rule 6b, 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.** Staff believe that this proposal for instream flow use is a valuable additional beneficial use of the historical Shoshone Power Plant water rights to preserve and improve the natural environment by restoring flows in the depleted reach of stream and improving river connectivity and habitat. This initial presentation of this proposal provides an opportunity for the Board and the public to identify questions or concerns that Staff and project partners can address at this or a subsequent meeting. Ultimately, the Board will be required to evaluate the appropriateness of the acquisition and, if accepted, to determine how best to utilize the acquired water to preserve and improve the natural environment, which will be subject to any terms and conditions imposed by the final change of water right decree.

II. Background

The proposed acquisition represents a rare opportunity for an important public-private partnership regarding operation of a large water right that has been, and will continue to be, important to most of the major water providers and water users in both the west slope and east slope of Colorado. This opportunity has come to CWCB after several decades of discussions and considerations of various options (both temporary and permanent) for managing the situation if the Shoshone Power Plant ceases to generate hydropower, and thus ceases use of the water rights. The Shoshone Water Rights, although physically impacting a relatively short reach of stream, because of its magnitude and location of operation can have an effect on a large part of the entire state of Colorado. Because of the magnitude of potential impacts, project partners are dedicated to maintaining river operations upon which water users statewide have historically relied and planned. Project partners will continue to



coordinate with the many other statewide water users during the water court process to ensure non-injury to other water rights, as is required by Colorado water law.

(1) Key Drivers of Colorado River Administration

A number of features drive the complex administration of the Colorado River within the state of Colorado. Multiple transmountain water diversions (TMDs) divert an average of nearly 500,000 acre-feet from the Colorado River and its tributaries on the “west slope” for front-range uses on the “east slope”. The large **upstream** TMDs include: Adams Tunnel (Colorado-Big Thompson and Windy Gap projects managed by USBR and Northern Water); Robert’s Tunnel (Denver Water); Moffat Tunnel (Denver Water); and Homestake Tunnel (Aurora and Colorado Springs). The large **downstream** TMDs include: Boustead Tunnel (Fry-Ark Project managed by SEWCD, CPW, and USFS); and Twin Lakes Tunnel (Twin Lakes Canal Company). In addition to the large TMDs, several large reservoirs are used to store water for east slope use, to replace east slope uses on the west slope, or as compensatory water for west slope use. The large **upstream** reservoirs include: the four reservoirs of the Colorado Big Thompson project (Lake Granby, Shadow Mountain Reservoir, Grand Lake, and Willow Creek Reservoir); Windy Gap Reservoir; Dillon Reservoir; Green Mountain Reservoir; Williams Fork Reservoir; Wolford Mountain Reservoir; and Homestake Reservoir. The main **downstream** reservoir is: Ruedi Reservoir. See the maps at **Enclosure A**. The large and dominant calling water rights are the Shoshone Water Rights (described below in **Section II (2)**), and the Cameo water rights demand for Grand Valley irrigators.

(2) State-based Planning and Management Efforts

State-funded planning efforts and processes have identified permanent protection of the Shoshone water rights as critical to the Colorado River. The Colorado Basin Roundtable’s Basin Implementation Plan¹ states that, “Protecting the Shoshone Hydroelectric Plant [water rights], Grand Valley irrigators’ water rights (Cameo Call), and the 15-Mile Reach are vital to both consumptive and nonconsumptive needs.” It encourages all entities to “work together to ensure the Shoshone Hydroelectric Plant water rights are maintained in perpetuity to ensure downstream water deliveries are made.” The Upper Colorado Wild and Scenic Alternative Management Plan² (W&S Plan) is a state-supported effort to develop an alternative to a Wild and Scenic designation to protect the Outstandingly Remarkable Values (ORVs) in the Colorado River from the confluence with the Blue River downstream to a location near No Name Creek, just downstream of Shoshone. This stakeholder-led plan, formally federally adopted in 2015, identifies the Shoshone and Cameo Water Rights as long-term protective measures that are “expected to provide significant protection of the ORVs.” ORVs include

¹ Colorado Basin Implementation Plan, Volume 1, January 2022, https://dnrweblink.state.co.us/cwcbsearch/0/edoc/216707/Colorado_BIP_Volume1_2022.pdf

² Amended and Restated Upper Colorado River Wild and Scenic Stakeholder Group Management Plan, Adopted January 2012, Amended and Restated June 2020 Last revised July 2024 https://www.upcowildandscenic.com/uploads/1/3/5/3/135388668/amended_and_restated_sg_plan_july_2024.pdf

scenic, recreational fishing, recreational float-boating, geological, wildlife, historical, and paleontological values. According to the W&S Plan, the administrative call from these water rights “generally results in stream flow through the subject stream segments in amounts greater than would exist in the absence of the administrative call.” Lastly, the Middle Colorado River Integrated Water Management Plan³ (2021), which evaluated the Colorado River from Glenwood Canyon to De Beque Canyon, identified securing the permanent acquisition of the Shoshone Water Rights with the addition of an instream flow use as an important action that can benefit irrigation, municipal, recreational, and environmental interests.

III. The Proposal

The Colorado River Water Conservation District (“River District”) and Public Service Company of Colorado (“PSCo”) have offered to the Colorado Water Conservation Board (“CWCB”) an interest in the Shoshone Water Rights for instream flow (“ISF”) purposes on the mainstem of the Colorado River in Glenwood Canyon. See the maps at **Enclosure A**, the offer letter at **Enclosure B**. The Shoshone Water Rights are decreed for non-consumptive hydropower generation use at the Shoshone Hydroelectric Power Plant, currently owned by PSCo, a subsidiary of Xcel Energy. Through a December 2023 Purchase and Sale Agreement (“PSA”), the River District agreed to purchase, and PSCo agreed to sell, the Shoshone Water Rights, so long as the water rights will be used for instream flow purposes to the extent they are not being used for power generation, contingent on a number of conditions including a PSCo lease for continued hydroelectric power generation while the power plant remains operable.

Under this proposal, the River District would purchase and maintain ownership of the water rights, while CWCB would hold perpetual ISF use rights, and PSCo would hold a lease for hydropower use. See draft ISF Agreement as **Enclosure C**. The Shoshone Water Rights offered to CWCB total 1,408 cfs, comprised of the Senior Shoshone Water Right in the amount of 1,250 cfs, and the Junior Shoshone Water Right in the amount of 158 cfs, (together, the “Shoshone Water Rights”), as further described below in **Section VI**. The CWCB would use these water rights, pursuant to their individual priorities, in the combined amount of up to 1,408 cfs, as recommended by Colorado Parks and Wildlife (see CPW recommendation as **Enclosure D**), to preserve and improve the natural environment to a reasonable degree in a 2.4 mile reach of the Colorado River between the Shoshone Power Diversion Dam and Tunnel and the Shoshone Power Plant Discharge Outlets (“Shoshone Reach”), as shown on the maps at **Enclosure A**.

To effectuate the proposal, a joint water court application will be required, in which CWCB, PSCo, and the River District will be co-applicants. In the water court application, the co-applicants will request a change of the beneficial use of the water rights to add instream flow use by the CWCB when the rights are not being used, or only partially being used, to generate hydropower. See draft water court application, as **Enclosure E**. The River District’s proposed

³Middle Colorado River Integrated Water Management Plan, 2021
<https://www.midcowatershed.org/iwmp>

dedication of the exclusive right to use the Shoshone Water Rights for instream flow purposes to the CWCB is in accordance with section 37-92-102(3), C.R.S., and the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR 408-2 ("ISF Rules").

IV. The Board's ISF Acquisition Procedures

ISF Rule 6 governs the Board's procedures to acquire water for ISF use. ISF Rule 6b gives the Board 120 days from the Board's first consideration of the proposed acquisition to determine what terms and conditions it will accept in an acquisition agreement for an interest in water to preserve and improve the natural environment. ISF Rule 6 requires a minimum of two Board meetings to allow for public input prior to taking final action on a proposed acquisition. The Board's initial consideration of this proposal at its May 2025 meeting initiates the 120-day time period for the Board to consider the proposed acquisition. ISF Rule 6e requires the Board to evaluate the appropriateness of the acquisition and, if accepted, to determine how best to utilize the acquired water to preserve or improve the natural environment. ISF Rule 6e lists several factors the Board shall consider in its evaluation of the acquisition, which are addressed in **Section VIII** of this memo.

The Board can take final action on the proposal at the following Board meeting in July 2025. However, ISF Rule 6m(4) provides that any person may request the Board to hold a hearing on the proposed acquisition, so long as such request is filed within 20 days after the first consideration, which is this May 2025 Board meeting. In the event a hearing is requested, the Board will need to take action to consider the request, and if granted, to appoint a Hearing Officer and schedule a hearing to occur within 120 days of this first consideration. Such hearing and final decision on the proposal could occur at the Board meeting in September 2025.

The Board can accept several types of ISF acquisitions for water, water rights, or interests in water, for various durations including temporary, long-term, and permanent acquisitions. Two different statutes govern the required processes after CWCB approval: (a) permanent acquisitions fall under 37-92-102(3) C.R.S., which operate under the jurisdiction of the Water Court; and (b) temporary loan acquisitions fall under 37-83-105 C.R.S., which operate under the jurisdiction of the Division of Water Resources. This proposal is for a permanent acquisition of an interest in water under 37-92-102(3) that requires judicial action by the water court to allow a new beneficial use under Colorado water rights law. The Board can accept the interest in the water right, but the water right must be changed in water court to allow the additional ISF use under a final decree before the ISF use can occur. Acceptance of the full decreed amount by the CWCB Board is essential so that the full decreed water right may be changed in water court; however, the future use of the Shoshone Water Right shall be subject to any terms and conditions imposed by the change of water right final water court decree. See generally 37-92-305(3) C.R.S. (regarding changes of water rights by the water courts). The water court process is required, as a standard procedure under the Water Rights and Determination Act of 1969, 37-92-101 C.R.S. ("the 1969 Act"), and so long as proper

notice is given, the water court shall have jurisdiction over all parties affected thereby, whether or not they chose to appear.

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

V. The Board Actions to Date

In response to the River District's September 2023 application to the CWCB for a Non-Reimbursable Investment Project seeking funding toward the purchase of the water rights associated with the Shoshone Power Plant, on January 25, 2024, the CWCB held a virtual workshop. At the workshop, presentations and discussions on the Shoshone Water Right Permanency Project included reviews of agreements and the ISF acquisition process with a general timeline. Board action followed during the January 29, 2024 CWCB Board meeting, in which the CWCB Board unanimously approved the request to partially fund the River District's purchase of the Shoshone Hydro Plant water rights. The 2024 Project's Bill (HB 24-1435) Section 14(2), states:

(2) (a) For the 2024-25 state fiscal year, \$20,000,000 is appropriated to the department of natural resources for use by the Colorado water conservation board. This appropriation is from the Colorado water conservation board construction fund created in section 37-60-121, C.R.S. To implement this subsection (2)(a), the Colorado water conservation board may use this appropriation to partner with the Colorado river water conservation district in the purchase of the water rights owned by the public service company of Colorado and currently used for the operation of the Shoshone power plant. The Colorado water conservation board shall vote to release the money to the Colorado river water conservation district after confirming that the closing conditions of the purchase and sale agreement between the Colorado river water conservation district and the public service company of Colorado have been met.

(b) The money appropriated in subsection (2)(a) of this section remains available for the designated purposes until June 30, 2031.

VI. The Shoshone Water Rights

The Shoshone Water Rights are currently used as decreed, for power generation by PSCo at the hydroelectric power plant (the "Shoshone Power Plant") located on the mainstem of the Colorado River in Glenwood Canyon, approximately six miles upstream of the City of

Glenwood Springs. The Shoshone Power Plant produces hydroelectric energy by means of PSCo's diversion of the Shoshone Water Rights (consisting of the 1905 senior priority water right in the amount of 1,250 cfs, and a 1940 junior priority water right in the amount of 158 cfs), further described as follows:

- (i) The Glenwood Power Canal and Pipeline water right, decreed on December 9, 1907, in Civil Action No. 466, Eagle County District Court, in the amount of 1,250 cfs with an appropriation date of January 7, 1902, for power, mining, milling, manufacturing, lighting, heating, and traction purposes; and as decreed absolute by the Eagle County District Court on February 27, 1911, in Civil Action No. 553 (the "Senior Shoshone Water Right"); and
- (ii) The Shoshone Hydro Plant Diversion No. 2 water right, decreed absolute on February 7, 1956, in Civil Action No. 1123, Eagle County District Court, in the amount of 158 cfs, with an appropriation date of May 15, 1929, for manufacturing and generation of electrical energy (the "Junior Shoshone Water Right").

See Shoshone decrees as **Attachment 2 to Enclosure F**. The water diverted by PSCo for hydropower generation use is returned to the Colorado River after such water is conveyed through the Shoshone Power Plant's penstocks and turbines to the river at the plant's discharge outlets, approximately 2.4 miles downstream of the point of diversion at the Shoshone Diversion Dam and Tunnel, as depicted on the maps attached as **Enclosure A**.

Administration and measurement of the Shoshone Water Rights has historically occurred using the streamflow gauge (USGS 09070500) located on the Colorado River near Dotsero, Colorado ("Dotsero Gage"). Consistent with historical administration, the "Natural Flow" is the amount of water in the Colorado River measured at the Dotsero Gage, including the amount of water usable under by the Shoshone Water Rights when those water rights are in priority, except that the Natural Flow does not include any water released from storage and conducted into the Colorado River upstream of the Dotsero Gage (accounting for evaporation and transit loss), which water is intended for delivery for use downstream of the discharge outlets for the Shoshone Power Plant.

VII. Summary of Proposed ISF Use

Under this proposal, CWCB would enter into a Water Right Dedication and ISF Agreement ("ISF Agreement") with the River District and PSCo, which dedicates to CWCB a perpetual ISF use of the Shoshone Water Rights. See draft ISF Agreement as **Enclosure C**. Pursuant to the PSA between the River District and PSCo, with an effective date of January 1, 2024, the River District is the contract purchaser of the Shoshone Water Rights. The PSA provides that PSCo, and its successors and assigns, is entitled to a leasehold interest in the Shoshone Water Rights for continued use of the Shoshone Water Rights for hydropower generation at the Shoshone Power Plant. See the "Lease," the form of which is attached to the PSA at **Attachment 3 to Enclosure F**.

CWCB would apply its acquired exclusive right for ISF use in the Shoshone Reach through approximately 2.4 miles on the Colorado River. The ISF use serves to preserve and improve the natural environment to a reasonable degree using the acquired interest in the Shoshone Water Rights for a combined rate of **up to** 1,408 cfs (under the 1902 senior right of 1250 cfs, and the 1929 junior right of 158 cfs), as further described above in **Section VI**. The water rights would retain their original individual priority dates with respect to water rights administration. Downstream of the Shoshone Reach, the return flows from use of the Shoshone Water Rights become part of the natural stream flow in the Colorado River and are available for appropriation and use by water rights holders. The CWCB would accept the proposed interest in the full decreed amount of the Shoshone Water Rights, which ISF use will then be subsequently limited by any terms and conditions imposed by the change of water right final water court decree, as required to prevent injury to other water users, both upstream and downstream of the Shoshone Reach. CPW analysis indicates that the best use of the acquired water rights is to preserve and improve the natural environment in the Shoshone Reach of the Colorado River at any rate up to full decreed amount of 1,408 cfs, and that fish habitat will also be improved in the Shoshone Reach at streamflows up to at least 3,000 cfs. See CPW's recommendation letter and report as **Enclosure D**. CPW evaluated the higher flow rates partly because, at times, there has been, and will continue to be, other water in the stream, including shepherded reservoir releases flowing through this stream reach for delivery to downstream uses. These higher flow rates consist of Natural Flow available to the Shoshone Water Rights combined with the shepherded water.

Because this acquisition is for non-consumptive water rights, and has no associated historical consumptive use, the provisions of sections 37-92-102(3) and 305(3)(b), C.R.S. (requiring that all contracts or agreements for interests in water, and the water court decree implementing the contracts or agreements, to state that the board or the lessor, lender, or donor may bring about beneficial use of the historical consumptive use of the leased, loaned, or donated water right downstream of the instream flow reach as fully consumable water) are not relevant and do not apply to this acquisition.

The Shoshone Water Rights influence flow in the Colorado River and its tributaries both upstream and downstream of the Shoshone Reach. Administration and use of the Shoshone Water Rights for ISF use in the Shoshone Reach is intended to replicate the historical administration and use of the Shoshone Water Rights. Administration and use of the water rights for ISF purposes in the Shoshone Reach will allow for the continuance of administrative practices and water availability scenarios upon which water users have relied, and for the continuance of water supply plans for many entities both upstream and downstream of the Shoshone Reach. **Upstream**, this will help maintain the historical stream flow conditions in the Colorado River mainstem and its tributaries upon which upstream water users have relied, including conditions for CWCB's many upstream ISF water rights. **Downstream**, because administration and use of the Shoshone Water Rights for ISF use in the Shoshone Reach should not change, this use will maintain required historical return flows in the Colorado River mainstem upon which downstream water users have relied, including downstream ISF water rights. Maintaining such downstream return flow conditions is a standard requirement in

water court for water rights change cases. Factors the Board is required to consider are discussed below in **Section VIII**.

VIII. Factors Required for CWCB to Consider

Pursuant to ISF Rule 6e, the Board shall evaluate the appropriateness of any acquisition of water, water rights, or interests in water to preserve or improve the natural environment. Such evaluation shall include, but need not be limited to consideration of the following factors, as discussed under each of the enumerated factors:

(1) The reach of stream or lake level for which the use of the acquired water is proposed, which may be based upon any one or a combination of the following: the historical location of return flow; the length of the existing instream flow reach, where applicable; whether an existing instream flow water right relies on return flows from the water right proposed for acquisition; the environment to be preserved or improved by the proposed acquisition; or such other factors the Board may identify;

The proposed reach for ISF use of the Shoshone Water Rights, the Shoshone Reach, is an approximately 2.4-mile reach of the Colorado River in Glenwood Canyon between the Shoshone Power Diversion Dam and Tunnel (“Upstream Terminus”), and the Shoshone Power Plant Discharge Outlets (“Downstream Terminus”). See maps in **Enclosure A**. The Shoshone Reach is defined by the Shoshone Water Rights decrees and historical operations. The Shoshone Power Plant takes water from the Colorado River via the Shoshone Diversion Dam and Tunnel, which is located upstream of the Shoshone Power Plant. This historical use of the Shoshone Water Rights for power generation depletes the Shoshone Reach by the full diversion amount during plant operation. Once water is diverted from the river at the Shoshone Diversion Dam, it is conveyed through a tunnel in the canyon walls, before dropping through two turbines and returning to the Colorado River via discharge outlets located just beneath the Shoshone Power Plant, which is the historical location of return flows. There is not an existing ISF water right in this reach, and no existing ISF relies on the return flows except to the extent that return flows may flow, if not consumed, to the 15-Mile Reach ISF water rights decreed in Case Nos. 92CW286 and 94CW330. The natural environment to be preserved and improved is within this 2.4-mile reach of the Colorado River in Glenwood Canyon, as further discussed in **Section VIII (5)** below.

Upstream of the Shoshone Reach, the CWCB holds over 300 decreed ISF water rights that protect nearly 1,500 miles of streams and rivers. See maps in **Enclosure A**. These ISFs, held on behalf of the people of Colorado, preserve headwater streams tributary to the mainstems, as well as mainstem reaches of the Colorado, Blue, and Eagle Rivers. These ISF water rights protect values that range from conserving native Colorado Cutthroat Trout to recreationally important Gold Medal sport fisheries throughout the upper basin. The ISFs above the Shoshone Reach were appropriated based on the stream conditions that existed at the time of the appropriation. When calling, the Shoshone Water Rights have historically curtailed junior diverting water rights on the tributaries, effectively bringing streamflow through these

upstream ISF reaches, particularly during low-flow conditions when calls are necessarily placed. For example, in 2023, Fraser River streamflow dropped significantly, and upon investigation, it was found that when the Shoshone call was abruptly turned off, diverters were able to take an additional 9-10 cfs from two different tributaries to the Fraser River. DWR could not curtail the water rights without a senior call in effect. This dried up Vasquez Creek and reduced streamflow below the decreed ISF rates on the Fraser River. This is just one example to demonstrate that without maintenance of the historical flow regime, there is potential for stream conditions to change significantly in the upper portion of the basin, both on the mainstem and on the tributaries, resulting in less streamflow for existing ISF water rights.

Downstream from the Shoshone Reach, the CWCB holds numerous decreed ISF water rights in the headwater streams tributary to the mainstems, as well as in mainstem reaches of the Roaring Fork, Crystal, and Colorado Rivers that are indirectly impacted by operations of the Shoshone Water Rights. See maps in **Enclosure A**. Potential impacts to these downstream ISF water rights by Shoshone operations are complex and depend on operations of both large and small individual water rights, which is difficult to parse, demonstrating the degree of entanglement of ISF water rights with other operations over several different river basins.

(2) The natural flow regime;

The headwaters of the Colorado River originate in the State of Colorado in Rocky Mountain National Park along the continental divide at about ~14,300 feet in elevation. The Colorado River flows for about 166 miles through Grand Lake, Kremmling, and Glenwood Canyon before reaching the Shoshone Powerplant Diversion Dam. Flows in the Shoshone Reach are the result of a natural snowmelt runoff flow regime, together with significant flow alteration due to water uses throughout the 4,470 square mile basin.

Streamflow in the Colorado River is highly variable year to year and seasonally due to natural differences in snowpack, rain events, and baseflow processes. There are also many sources of flow alteration in the upstream basin including multiple TMDs, large reservoirs, smaller reservoirs, in-basin diversions, and other releases to the 15-Mile Reach. These different water uses have a variety of effects from reducing the total flow volume to changing the magnitude or timing of water reaching the Shoshone Reach.

The USGS measures streamflow at the Colorado River Dotsero Gage, USGS 09070500), approximately 8.5 miles upstream from the Shoshone Reach. The Dotsero Gage, which includes effects from upstream water uses, indicates that for the full gage period of record from 1940 to 2024, monthly mean flows are between 4,600 and 6,100 cfs during runoff and between 850 cfs and 1,200 cfs during winter months. Peak streamflow during snowmelt runoff can be as low as 2,000 cfs in drought years such as 2002 and over 22,000 cfs in extreme runoff years like in 1984.

(3) Any potential material injury to existing decreed water rights;

Within the Shoshone Reach, there are no other water rights or diversions. However, a number of augmentation plans and exchanges extend through this reach. By maintaining the non-consumptive nature of the water rights, along with continuing operation of the water rights in their historical manner, the exchanges and augmentation plans should be unaffected by the new ISF use. This proposed acquisition is intended to maintain historical use and replicate historical return flows.

There are many existing decreed junior and senior water rights located both upstream and downstream of the Shoshone Water Rights and the associated Shoshone Reach. Many junior upstream users can continue to divert during a Shoshone call because they operate under either individual augmentation plans or are covered by the Green Mountain Reservoir historic user pool releases ("HUP"). Downstream users rely on the return flows from the Shoshone operation. Because the historical operation is to be maintained with the proposed ISF use, both the upstream and downstream water rights will be protected against injury. The upstream water rights should experience the same operation of their water rights, which will continue to rely on the existing augmentation plans and HUP protections. The downstream users can continue to rely on maintenance of historical return flows from this new non-consumptive ISF use. The details of the historical use that is to be replicated will appropriately be analyzed during the required water court process, is designed to investigate such details. Use of the Shoshone Water Rights for ISF and hydropower purposes shall be subject to any terms and conditions imposed by the change of water right decree to be entered by the water court.

(4) The historical consumptive use and historical return flows of the water right proposed for acquisition that may be available for instream flow use;

The Shoshone Water Rights have been used throughout most of the 20th century and are still in operation today. This long period of hydropower plant operation provides a robust historical use period that will result in acquired water rights that can be used for ISF beneficial use upon completion of a change case. The exact amount and timing of water that can be put to ISF use will be determined during the water court change case. It is the intent of the proposed acquisition to replicate the historical use and historical return flows while applying this non-consumptive water right to ISF use within the historically depleted stream reach. Because the historical use is for non-consumptive power generation, the measure of the water right is its historical use, rather than a historical consumptive use. Pursuant to any restrictive terms and conditions in the final water court decree, so long as the return flows are maintained to the stream downstream of the Shoshone Reach, the full historical diversion amount will become available for ISF use within the Shoshone Reach, to the extent the water rights are not being used to generate hydropower. As with any change of water rights, determining the historical use amount can be a complicated, time-consuming, and potentially controversial endeavor. During the water court process, parties to the change case will present and discuss their engineering analyses and legal positions regarding the historical use

of the Shoshone Water Rights using various types of measures, models, and operations regarding historical stream flow, diversions, administration, reservoir releases, water rights analysis, and power generation. Several numerical and conceptual models will likely be discussed as part of the water court process, which will rely on water rights experts and will be a multi-year process to develop decree terms and conditions regarding the amount of water that will be available for ISF use under the Shoshone Water Rights. Interested parties to date have expressed support for this proposal in general but have expressed hesitation on the historical use analysis and resulting amount of water that will be available for ISF use. Details regarding limits on timing and amounts will be evaluated during the water court process and will be imposed by the final water court decree.

(5) The natural environment that may be preserved or improved by the proposed acquisition, and whether the natural environment will be preserved or improved to a reasonable degree by the water available from the proposed acquisition;

The Shoshone Reach of the Colorado River runs through the central portion of Glenwood Canyon, a confined canyon where the river over time carved a deep gorge that runs nearly 15 miles between 2,500 feet high walls of sedimentary rock. The canyon is a heavily trafficked corridor, the river and its floodplain are confined by Interstate 70, a streamside recreational path, and railroad. The Shoshone Reach of the Colorado River in Glenwood Canyon supports a high-quality fishery, even in its dewatered state with limited available habitat. The legal diversion by the Shoshone Water Rights of the entirety of the Colorado River when flows are less than 1,408 cfs leaves the Shoshone Reach in a dewatered state. Under seasonally low flows with diminished conditions, aquatic habitat persists, specifically in deep pools and glides isolated by steep boulder drops or shallow riffles. Despite the anthropogenic alteration of the Colorado River through Glenwood Canyon, the Shoshone Reach continues to support a variety of native and sport fisheries and some limited riparian areas. Wildlife commonly encountered include bighorn sheep, river otters, beaver, Mule Deer, elk, Peregrine Falcons, and eagles. Riparian and upland plant communities generally consist of cottonwood and alder in the riparian areas, and oak, pine, spruce, fir, and aspen trees in the uplands. The unique canyon geology includes caves, springs, and geothermal outputs. Consistent base flows and periodic high flows would provide major benefits in the Shoshone Reach that include maintenance of food webs and sediment dynamics, dampening of temperature extremes, and increased aquatic habitat. See GEI's report as **Enclosure G**.

Given the demonstrated biological benefits within the Shoshone Reach, to the Colorado River headwaters and tributaries, and to the mainstem Colorado River below the power plant, CPW staff believe this is an appropriate acquisition and recommends the CWCB accept the interest in the acquired water. CPW's analysis indicates that the best use of the acquired water rights is to preserve and improve the natural environment in the Shoshone Reach of the Colorado River at any rate up to the full decreed amount of 1,408 cfs, and that fish habitat will also be improved in the Shoshone Reach at streamflows up to at least 3,000 cfs. See CPW's recommendation letter and report as **Enclosure D**. CPW evaluated the higher flow rates because, at times, there has been, and will continue to be, other water in the stream,

including shepherded reservoir releases flowing through this stream reach for delivery to downstream uses. These higher flow rates consist of Natural Flow available to the Shoshone Water Rights combined with the shepherded water.

(6) The location of other water rights on the subject stream(s);

Within the Shoshone Reach, there are no other water rights or diversions. However, a number of augmentation plans, exchanges, and water deliveries extend through the Shoshone Reach. There are many decreed junior and senior water rights located both upstream and downstream of the Shoshone Reach. See **Section II (1)** above, for a list of the main structures. See the discussion regarding protection from injury above, in **Section VIII (3)**.

(7) The effect of the proposed acquisition on any relevant interstate compact issue, including whether the acquisition would assist in meeting or result in the delivery of more water than required under compact obligations;

CWCB will ensure that the change of the Shoshone Water Rights to allow ISF uses will not expand the historical use of the water right and will not reduce the return flows that were maintained by the historical diversions. Use of the Shoshone Water Rights for ISF and hydropower purposes shall be subject to terms and conditions imposed by the change of water right decree to be entered by the water court, which will restrict the future use. Downstream of the Shoshone Reach, the return flows from use of the Shoshone Water Rights will become part of the natural stream flow in the Colorado River and will be available for other uses as it was historically. CWCB will ensure that this acquisition will not have an effect on interstate compact issues.

(8) The effect of the proposed acquisition on the maximum utilization of the waters of the state;

The beneficial use of the Shoshone Water Right under this acquisition will be for non-consumptive ISF use in the Shoshone Reach. Because the water right is non-consumptive, any other use of this water right must also be non-consumptive, which includes very few types of other water uses. CWCB will ensure that changing these water rights to include ISF use will allow the same level of utilization of the non-consumptive Shoshone Water Rights, which will not alter water available for other uses. Therefore, CWCB will ensure that use of the Shoshone Water Rights for instream flow to preserve and improve the Colorado River in the Shoshone Reach will continue to allow maximum utilization of the waters of the State of Colorado. At the lower terminus of the Shoshone Reach, the historical return flow will be maintained and will become part of the natural stream flow available for downstream water uses, both consumptive and nonconsumptive. There are several large diversions downstream of the Shoshone Reach which rely on the historical return flows. Furthermore, for any return flows that remain in the river, that are not diverted and consumed between Shoshone and the 15-Mile Reach, have been used, and may continue to be used, by the ISF water right held by CWCB in 15-Mile Reach as another non-consumptive use. Consequently, by not expanding the

historical use, and by continuing the utilization of the Shoshone Water Rights, CWCB will ensure that this acquisition will not have a negative effect on the maximum utilization of the waters of the state.

(9) Whether the water acquired will be available for subsequent use or reuse downstream;

The River District and PSCo will not claim any right of use of the Shoshone Water Rights downstream of the Shoshone Reach in the change case filed for this acquisition. CWCB will not claim any such right, but rather any right of use in the Shoshone Water Rights ends at the Lower Terminus of the Shoshone Reach. Downstream of the Shoshone Reach, the return flows from use of the Shoshone Water Rights will become part of the natural stream flow in the Colorado River and will be available for appropriation and use by water rights holders.

Because this acquisition is for non-consumptive water rights, for which the return flow from use of these water rights will become part of the natural stream flow downstream of the Shoshone Reach, the provisions of §§37-92-102(3) and 305(3)(b), C.R.S. (requiring that all contracts or agreements for interests in water, and the water court decree implementing the contracts or agreements, to state the board or the lessor, lender, or donor may bring about beneficial use of the historical consumptive use of the leased, loaned, or donated water right downstream of the instream flow reach as fully consumable water) are not relevant and do not apply to this acquisition.

(10) The cost to complete the transaction or any other associated costs;

The River District has applied for a non-reimbursable grant in the amount of \$20 million from CWCB, which CWCB has approved to help pay for a portion of their \$99 million purchase of this water right from PSCo. This acquisition for ISF use is part of the grant process and does not require additional payments from the funds specifically allocated for ISF acquisitions from the construction fund. Other funds for the purchase include \$20 million committed by River District's Board of Directors, over \$16 million committed by west slope supporters, and \$40 million awarded but not yet contracted by the U.S. Bureau of Reclamation as part of the Inflation Reduction Act's Upper Basin Environmental Drought Mitigation, Bucket 2 Ecosystem ("B2E") Financial Assistance Program. CWCB's other associated costs to complete the transaction include time commitments by staff and the Attorney General's Office for the Board process and water court processes, followed by operational needs with record keeping, which are all part of CWCB's normal operating budget.

(11) The administrability of the acquired water right when used for instream flow purposes;

The Colorado Division of Water Resources ("DWR") administers calls for the Shoshone Water Rights which have resulted in the curtailment of junior water rights upstream of the Shoshone Power Plant. The administration of the water rights, whether for hydropower use or for ISF

use, should remain the same as the historical practice and should be unaffected by this additional ISF use. The Senior Shoshone Water Right is one of the most senior water rights on the Colorado River. During significant periods of the year, there is not sufficient water to satisfy all water rights decreed on the Colorado River and its tributaries within the State of Colorado, thus administration of calls against junior water rights have been placed, by both the senior and the junior Shoshone Water Rights. Administration and measurement of the Shoshone Water Rights has historically occurred using the Dotsero Gage. Consistent with historical administration, the Natural Flow is the amount of water in the Colorado River measured at the Dotsero Gage, including the amount of water usable by the Shoshone Water Rights when those water rights are in priority, except that the Natural Flow does not include any water released from storage and conducted into the Colorado River upstream of the Dotsero Gage (accounting for evaporation and transit loss), which water is intended for delivery for use downstream of the discharge outlets for the Shoshone Power Plant.

IX. Conclusion

At a future Board meeting in which the Board will be asked to take final action, it is anticipated that Staff will recommend that the Board take the following actions:

- Determine that the CWCB accepts a perpetual interest in the Shoshone Water Rights for instream flow use up to the full decreed amounts to preserve and improve the natural environment to a reasonable degree;
- Direct the CWCB Director to sign the ISF Agreement, so long as it is substantially similar to the draft ISF Agreement attached to the Board memo;
- Determine that the best use of the acquired interest in the Shoshone Water Rights is to preserve and improve the natural environment to a reasonable degree within the Shoshone Reach of the Colorado River, up to the flow rates recommended by CPW, which will be included in the water court application; and
- Direct Staff to work with the Attorney General's Office and the Co-Applicants to file a water court application requesting to add an instream flow use to the Shoshone Water Rights in accordance with 37-92-102(3).

The Board can take final action on this proposal at the following Board meeting in July 2025 if no hearing is requested. However, if a hearing is requested within 20 days of the day the Board hears the proposal, and the Board grants the request, the hearing must be held within 120 days of May 21, 2025. The hearing and final action could occur at the September 2025 Board meeting. If the Board accepts the acquisition, a water court application would be filed, and the multi-year water court process could begin.

Enclosures:

- A. Maps
 - A1. Shoshone Reach
 - A2. Colorado River Basin Transbasin Diversions and Reservoirs
 - A3. Colorado River Basin ISF Water Rights
- B. River District & PSCo's Offer Letter
- C. Draft ISF Agreement
- D. CPW's Recommendation Letter and Report
 - D1. CPW's Letter of Recommendation
 - D2. CPW's Biological Evaluation Report
- E. Draft Water Court Application
- F. River District's Technical Memorandum - with Attachments
 - Attachment 1. Shoshone Water Rights Decrees
 - Attachment 2. Maps
 - Attachment 3. 2016 Shoshone Outage Protocol Agreement
 - Attachment 4. Draft Instream Flow Agreement
 - Attachment 5. 2024 Miller Report
 - Attachment 6. 2025 Ecosystem Report
 - Attachment 7. USFS-BLM Report
 - Attachment 8. HU Assessment
 - Attachment 9. Check Case Memo
 - Attachment 10. Purchase and Sale Agreement
 - Attachment 11. Hydros Yield Assessment
 - Attachment 12. Hydros Yield Addendum
 - Attachment 13. ISF Benefits Memorandum
 - Attachment 14. Draft Water Court Application
- G. GEI Report - GEI Consultants, Inc., April 2025 "Review of the Effects of Flow on Biology and Stream Processes, Glenwood Canyon"
- H. Public Comment Letters (Aurora & Colorado Springs Utilities)

West's Colorado Revised Statutes Annotated
Title 37. Water and Irrigation
Water Rights and Irrigation
Water Right Determination and Administration
Article 92. Water Right Determination and Administration (Refs & Annos)
Part 1. General (Refs & Annos)

C.R.S.A. § 37-92-102

§ 37-92-102. Legislative declaration--basic tenets of Colorado water law

Currentness

(1)(a) It is hereby declared to be the policy of the state of Colorado that all water in or tributary to natural surface streams, not including nontributary groundwater as that term is defined in [section 37-90-103](#), originating in or flowing into this state have always been and are hereby declared to be the property of the public, dedicated to the use of the people of the state, subject to appropriation and use in accordance with [sections 5 and 6 of article XVI of the state constitution](#) and this article. As incident thereto, it is the policy of this state to integrate the appropriation, use, and administration of underground water tributary to a stream with the use of surface water in such a way as to maximize the beneficial use of all of the waters of this state.

(b) A stream system which arises as a natural surface stream and, as a natural or man-induced phenomenon, terminates within the state of Colorado through naturally occurring evaporation and transpiration of its waters, together with its underflow and tributary waters, is a natural surface stream subject to appropriation as provided in paragraph (a) of this subsection (1).

(2) Recognizing that previous and existing laws have given inadequate attention to the development and use of underground waters of the state, that the use of underground waters as an independent source or in conjunction with surface waters is necessary to the present and future welfare of the people of this state, and that the future welfare of the state depends upon a sound and flexible integrated use of all waters of the state, it is hereby declared to be the further policy of the state of Colorado that, in the determination of water rights, uses, and administration of water, the following principles shall apply:

(a) Water rights and uses vested prior to June 7, 1969, in any person by virtue of previous or existing laws, including an appropriation from a well, shall be protected subject to the provisions of this article.

(b) The existing use of groundwater, either independently or in conjunction with surface rights, shall be recognized to the fullest extent possible, subject to the preservation of other existing vested rights, but, at his own point of diversion on a natural watercourse, each diverter must establish some reasonable means of effectuating his diversion. He is not entitled to command the whole flow of the stream merely to facilitate his taking the fraction of the whole flow to which he is entitled.

(c) The use of groundwater may be considered as an alternate or supplemental source of supply for surface decrees entered prior to June 7, 1969, taking into consideration both previous usage and the necessity to protect the vested rights of others.

(d) No reduction of any lawful diversion because of the operation of the priority system shall be permitted unless such reduction would increase the amount of water available to and required by water rights having senior priorities.

(3) Further recognizing the need to correlate the activities of mankind with some reasonable preservation of the natural environment, the Colorado water conservation board is hereby vested with the exclusive authority, on behalf of the people of the state of Colorado, to appropriate in a manner consistent with [sections 5 and 6 of article XVI of the state constitution](#), such waters of natural streams and lakes as the board determines may be required for minimum streamflows or for natural surface water levels or volumes for natural lakes to preserve the natural environment to a reasonable degree. In the adjudication of water rights pursuant to this article and other applicable law, no other person or entity shall be granted a decree adjudicating a right to water or interests in water for instream flows in a stream channel between specific points, or for natural surface water levels or volumes for natural lakes, for any purpose whatsoever. The board also may acquire, by grant, purchase, donation, bequest, devise, lease, exchange, or other contractual agreement, from or with any person, including any governmental entity, such water, water rights, or interests in water that are not on the division engineer's abandonment list in such amount as the board determines is appropriate for streamflows or for natural surface water levels or volumes for natural lakes to preserve or improve the natural environment to a reasonable degree. At the request of any person, including any governmental entity, the board shall determine in a timely manner, not to exceed one hundred twenty days unless further time is granted by the requesting person or entity, what terms and conditions it will accept in a contract or agreement for such acquisition. Any contract or agreement executed between the board and any person or governmental entity that provides water, water rights, or interests in water to the board shall be enforceable by either party thereto as a water matter under this article, according to the terms of the contract or agreement. The 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), including, but not limited to, criteria addressing public notice, the extent to which the leased or loaned water will benefit the natural environment to a reasonable degree, and calculation of the compensation paid to the lessor of the water based upon the use of the water after the term of the lease. As a condition of approval of a proposed contract or agreement for a lease or loan of water, water rights, or interests in water pursuant to this subsection (3), the board shall obtain confirmation from the division engineer that the proposal is administrable and is capable of meeting all applicable statutory requirements. All contracts or agreements entered into by the board for leases or loans of water, water rights, or interests in water pursuant to this subsection (3) shall require the board to maintain records of how much water the board uses under the contract or agreement each year it is in effect and to install any measuring devices deemed necessary by the division engineer to administer the contract or agreement and to measure and record how much water flows out of the reach after use by the board under the contract or agreement, unless a measuring device already exists on the stream that meets the division engineer's requirements. All contracts or agreements for water, water rights, or interests in water under this subsection (3) shall provide that, pursuant to the water court decree implementing the contract or agreement, the board or the lessor, lender, or donor of the water may bring about beneficial use of the historical consumptive use of the leased, loaned, or donated water right downstream of the instream flow reach as fully consumable reusable water. The board shall file a change of water right application or other application with the water court to obtain a decreed right to use water for instream flow purposes under a contract or agreement for a lease or loan of water, water rights, or interests in water pursuant to this subsection (3). The resulting water court decree shall quantify the historical consumptive use of the leased or loaned water right and determine the method by which the historical consumptive use should be quantified and credited during the term of the agreement for the lease or loan of the water right. Said method shall recognize the actual amount of consumptive use available under the leased or loaned water right and shall not result in a reduction of the historical consumptive use of that water right during the term of the lease or loan, except to the extent such reduction is based upon the actual amount of water available under said rights. All water rights under such decrees shall be administered in priority. The board may not accept a donation of water rights that either would require the removal of existing infrastructure without approval of the current owner of such infrastructure or that were acquired by condemnation. The board may use any funds available to it for acquisition of water rights and their conversion to instream flow rights. The board may initiate such applications as it determines are necessary or desirable for utilizing water, water rights, or interests in water appropriated, acquired, or held by the board, including applications for changes of water rights, exchanges, or augmentation plans. Prior to the initiation of any such appropriation or acquisition, the board shall request recommendations from the division of parks and wildlife. The board also shall request recommendations from the United States department of agriculture and the United States department of the interior. Nothing in this article shall be construed as authorizing any state agency to acquire water by eminent domain or to deprive the people of the state of Colorado of the beneficial use of those waters

available by law and interstate compact. Nothing in this subsection (3) shall impact section 37-60-121(2.5). Any appropriation made pursuant to this subsection (3) shall be subject to the following principles and limitations:

(a) Any such appropriation which is based upon water imported from one water division to another by some other appropriator shall not, as against the appropriator of such imported water or his successor in interest, constitute a claim, bar, or use for any purpose whatsoever.

(b) Any such appropriation shall be subject to the present uses or exchanges of water being made by other water users pursuant to appropriation or practices in existence on the date of such appropriation, whether or not previously confirmed by court order or decree.

(c) Before initiating a water rights filing, the board shall determine that the natural environment will be preserved to a reasonable degree by the water available for the appropriation to be made; that there is a natural environment that can be preserved to a reasonable degree with the board's water right, if granted; and that such environment can exist without material injury to water rights.

(c.5) Notwithstanding section 37-92-103(6), as to any application filed by the board on or after July 1, 1994, the board may not acquire conditional water rights or change conditional water rights to instream flow uses.

(d) Nothing in this section is intended or shall be construed to allow condemnation by this state or any person of easements or rights-of-way across private lands to gain access to a segment of a stream or lake where a water right decree has been awarded to the Colorado water conservation board.

(e) All recommendations, including those of the United States, which are transmitted to the board for water to be retained in streams or lakes to preserve the natural environment to a reasonable degree must be made with specificity and in writing in order that any appropriation made by the board may be integrated into the statewide system for the administration of water rights. Filings for appropriations by the board shall be consistent with other appropriations and with the requirements of this article.

(4) Any appropriation made pursuant to subsection (3) of this section shall also be subject to the following principles and limitations:

(a) Utilizing a public notice and comment procedure, the board, in its discretion, may determine whether or not to appropriate minimum streamflows or natural lake levels, or decrease such an appropriation, to preserve the natural environment to a reasonable degree. The board may adopt conditions attached to an appropriation or decreased appropriation, may file or withdraw statements of opposition in water court cases, and enter into stipulations for decrees or other forms of contractual agreements, including enforcement agreements, that it determines will preserve the natural environment to a reasonable degree. All contractual agreements and stipulations entered into by the board prior to May 23, 1996, regarding enforcement of its appropriations shall be given full force and effect. Any increase to an existing minimum streamflow or natural lake level appropriation or decree shall be made as a new appropriation.

(b)(I) Except as provided pursuant to paragraph (d) of this subsection (4), if the board determines that it is appropriate to consider decreasing an existing decreed appropriation, the board shall proceed through an adequate public notice and comment process to consider such decrease at a public meeting.

(II) For the purposes of this paragraph (b), “adequate public notice and comment process” shall include the following:

(A) Notice of the proposed decrease and the date of the public meeting at which it will first be considered shall be printed in the resume in the water court having jurisdiction over the decree that is the subject of the decrease. The first public meeting of the board at which the decrease is to be considered shall occur at least sixty-three days after the month in which the resume is published. Notice shall also be published in a newspaper of statewide distribution within thirty-five to forty-nine days prior to such first public meeting.

(B) If the board decides at such first public meeting to consider the proposed decrease, the board shall announce publicly the date of a subsequent public meeting for such purpose.

(C) On the written request of any person made within thirty-five days after the date of the first public meeting, the board shall delay the subsequent public meeting for up to one year to allow such person the opportunity for the collection of scientific data material to the proposed decrease. Such request may not be interposed solely for delay of the proceedings.

(D) On the written request of any person made within thirty-five days after the date of the first public meeting, the board shall, within sixty-three days after such request, establish fair and formal procedures for the subsequent public meeting, including the opportunity for reasonable disclosure, discovery, subpoenas, direct examination, and cross examination, and may promulgate rules that will assure orderly procedures. Subject to these rights and requirements, where a meeting will be expedited and the interests of the participants will not be substantially prejudiced thereby, the board may receive all or part of the evidence in written form.

(III) The board's final written determination regarding the decrease shall state its effective date, be mailed promptly to the persons who appeared by written or oral comment at the board's proceeding, and be filed promptly with the water court. Within thirty-five days after such effective date, any person who appeared by written or oral comment at the board's proceeding may file with the water court and serve the board a petition for judicial review of the board's determination that the decreed appropriation as decreased will preserve the natural environment to a reasonable degree, based on the administrative record and utilizing the criteria of [section 24-4-106\(6\)](#) and [\(7\), C.R.S.](#) Any such person may request a stay in accordance with the criteria of [section 24-4-106\(5\), C.R.S.](#), pending the review proceeding. If no petition is filed, the court shall promptly enter an order decreasing the board's appropriation decree in accordance with the board's written determination. If a petition is filed, the court shall promptly order briefing and oral argument and render its decision to affirm or set aside the board's determination. If the board's determination is affirmed, the court shall promptly enter an order decreasing the board's appropriation decree in accordance with the board's written determination. If the board's determination is set aside, the court shall enter its order of relief under the provisions of [section 24-4-106\(7\), C.R.S.](#) Appellate review of the court's order shall be as allowed in other water matters.

(c) The board's determinations regarding the matters to be determined by the board under paragraph (c) of subsection (3) of this section and paragraph (d) of this subsection (4) for new appropriations shall be subject to judicial review in the water court application and decree proceedings initiated by the board, based on the board's administrative record and utilizing the criteria of [section 24-4-106\(6\)](#) and [\(7\), C.R.S.](#) The board may file applications for changes of water rights and augmentation plans, and the water court shall determine matters that are within the scope of [section 37-92-305](#).

(d) The board may participate in the recovery implementation program for endangered fish species in the upper Colorado river basin and appropriate and obtain decrees for minimum instream flows or natural lake levels, including decree provisions for modification and enforcement, the implementation of which shall not be subject to paragraph (b) of this subsection (4), as it determines will preserve the natural environment of the Colorado river endangered fish within Colorado to a reasonable degree while protecting existing uses within Colorado and not depriving the people of the state of Colorado of the beneficial use of those waters available by law and interstate compact.

(e) Sub-subparagraphs (A) and (C) of subparagraph (II) of paragraph (b) of this subsection (4) shall not apply to the board's consideration of any proposed decrease which was included in a meeting notice and agenda issued by the board prior to May 23, 1996, whether or not the board had scheduled or taken any action on the proposal by such date. Sub-subparagraph (D) of subparagraph (II) of paragraph (b) of this subsection (4) shall not apply to such a proposal so long as the board establishes fair and formal procedures pursuant to such sub-subparagraph (D) at or before the first public meeting thereon for any subsequent public meeting, including the opportunity for reasonable disclosure, discovery, subpoenas, direct examination, and cross examination of witnesses. All other provisions in paragraph (b) of this subsection (4) shall apply to any decrease after May 23, 1996.

(4.5) Plan for augmentation to augment streamflows. (a) Legislative declaration. The general assembly hereby finds, determines, and declares that the Colorado water conservation board would benefit from direction with regard to water court applications for plans for augmentation to augment streamflows, as identified in subsection (3) of this section.

(b) Plan approval. To obtain a decreed plan for augmentation, the board, either as sole applicant or together with an owner of a decreed water right for which a change of water rights to include any augmentation use has been judicially approved, must file an application with the water court for approval of a plan for augmentation to augment streamflows and protect augmentation deliveries made pursuant to the plan for augmentation within a specific stream reach or reaches, at rates the board determines are appropriate to preserve or improve the natural environment to a reasonable degree. The application and approval process for a plan for augmentation to augment streamflows are subject to the following principles and limitations:

(I) The board may file an application only if the owner of the water right that is decreed for augmentation use is identified in the application and consents to the application.

(II) The procedures, standards, and requirements of this article 92 for plans for augmentation apply to applications filed under this subsection (4.5).

(III) A plan filed under this subsection (4.5) must use, for augmentation only, water rights:

(A) For which the historical consumptive use has been quantified; and

(B) For which a change of water rights to include any augmentation use has been judicially approved.

(IV) If the augmentation water right meets the requirements of subsection (4.5)(b)(III) of this section, no further change of that augmentation water right is required.

(V) The use of water as part of a plan for augmentation to augment streamflows is subject to the terms and conditions of any applicable decree to which that water is subject.

(VI) Additional terms and conditions must be imposed on the use of water as part of a plan for augmentation to augment streamflows as necessary to prevent injury to the owners of vested water rights or decreed conditional water rights. The terms and conditions must include 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 described in subsection (4.5)(b)(III) of this section or added pursuant to [section 37-92-305\(8\)\(c\)](#) before their use in the plan for augmentation of streamflows. A junior appropriator is entitled to the continuation of stream conditions as the conditions existed at the time of the junior appropriator's appropriation.

(VII) An applicant must prove that the plan for augmentation to augment streamflows 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 streamflows.

(VIII) The augmentation water used to augment streamflows in a plan for augmentation to augment streamflows shall not be diverted within the specific stream reach by an exchange, plan for substitution, plan for augmentation, or other means that cause a reduction of the augmentation water added to that stream reach. The augmentation water is subject to such reasonable transit losses as may be imposed by the water court or the state and division engineers.

(IX) If operation of a plan for augmentation requires the use of, or making of physical modifications to, an existing diversion structure within a stream reach to allow the augmentation water to bypass the structure, the operator of the plan must have consent from the owner of the existing structure and bear all reasonable construction costs associated with any physical modifications and all reasonable operational and maintenance costs incurred by the owner of the structure that would not have been incurred in the absence of the physical modifications to the structure.

(c) **Saving clause.** This subsection (4.5):

(I) Does not impair or in any way affect any water court decree, administrative authorization, or agreement that allows water decreed for environmental, piscatorial, water quality, recreational, or other in-channel purposes to be used in the natural stream channel for the decreed purposes;

(II) Is not intended to be the exclusive means of authorizing water decreed for augmentation purposes to be used for environmental, piscatorial, water quality, recreational, or other in-channel purposes, including the maintenance of dominion and control over the water released from a specific reservoir;

(III) Does not authorize, restrict, or preclude future water rights appropriations, administrative authorizations, or other agreements for the purposes listed in this subsection (4.5); and

(IV) Does not affect applications by the Colorado water conservation board for plans for augmentation not described in this subsection (4.5).

(5) Within thirty-five days after initiating any water rights filing for the adjudication of a recreational in-channel diversion, any county, municipality, city and county, water district, water and sanitation district, water conservation district, or water conservancy district shall submit a copy of the water rights application to the board for review.

(6)(a) Deleted by [Laws 2006, Ch. 197, § 1, eff. May 11, 2006](#).

(b) The board, after deliberation in a public meeting, shall consider the following factors and make written findings as to each:

(I) Whether the adjudication and administration of the recreational in-channel diversion would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements;

(II) Deleted by [Laws 2006, Ch. 197, § 1, eff. May 11, 2006](#).

(III) Deleted by [Laws 2006, Ch. 197, § 1, eff. May 11, 2006](#).

(IV) Whether exercise of the recreational in-channel diversion would cause material injury to instream flow water rights appropriated pursuant to subsections (3) and (4) of this section; and

(V) Whether adjudication and administration of the recreational in-channel diversion would promote maximum utilization of waters of the state.

(VI) Deleted by [Laws 2006, Ch. 197, § 1, eff. May 11, 2006](#).

(c) Within ninety days after the filing of statements of opposition, the board shall report its findings to the water court for review pursuant to [section 37-92-305\(13\)](#). The board may fully participate in the water court proceedings.

(d) Nothing in subsection (5) of this section or this subsection (6) shall apply in any way to any application for a water right or conditional water right for recreational in-channel diversion purposes that was filed prior to January 1, 2001.

(e) Nothing in subsection (5) of this section or this subsection (6) shall apply in any way to any water right or conditional water right for recreational in-channel diversion purposes for which a decree was entered prior to June 5, 2001, including any proceeding concerning diligence on such conditional water right or any proceeding to make such conditional water right absolute.

(7) Water users served by a provider of municipal or industrial water supplies may use graywater and install graywater treatment works, as those terms are defined in [section 25-8-103\(8.3\)](#) and [\(8.4\), C.R.S.](#), if:

(a) The use of graywater is limited to the confines of the operation that generates the graywater;

(b) Graywater is used for purposes that are permissible under the municipality's or water district's water rights; and

(c) Graywater is used in compliance with the requirements of [section 25-8-205\(1\)\(g\), C.R.S.](#)

(8) Reservoir releases for fish and wildlife mitigation--definitions. (a) The general assembly hereby finds, determines, and declares that:

(I) Allowing the owner of a water storage right that allows water to be stored in new reservoir capacity to contract with the board to dedicate to the board water stored under the water storage right for release from the new reservoir capacity to reasonably avoid, minimize, or mitigate impacts of the new reservoir capacity on fish and wildlife resources within an identified stream reach may enable the owner of the water storage right to comply with mitigation measures identified in a fish and wildlife mitigation plan approved under [section 37-60-122.2](#);

(II) Accordingly, for the limited purpose of providing additional methods to comply with a fish and wildlife mitigation plan approved under [section 37-60-122.2](#), it is appropriate to create a water court process to allow the owner of a water storage right that allows water to be stored in new reservoir capacity, a portion of which water will then be dedicated to the board, to:

(A) Obtain protection for water to be released from the new reservoir capacity, up to the amount of water that is appropriate for streamflows to preserve or improve the natural environment to a reasonable degree within the qualifying stream reach; and

(B) Maintain dominion and control over the released water through a qualifying stream reach;

(III) The released water subject to a protected mitigation release authorized under this subsection (8) must be rediverted at or below the downstream termination point of the qualifying stream reach, either directly at a surface point of diversion or by a decreed exchange as permitted in this subsection (8) for use by an owner for the decreed beneficial uses of that water storage right;

(IV) Except as otherwise provided in this subsection (8), the contractual dedication to the board must comply with the procedures and protections for other water rights specified in subsection (3) of this section;

(V) The water court process and resulting decree must ensure that:

(A) Protected mitigation releases do not expand the water storage right that is to provide the water for the protected mitigation releases or injure other water rights;

(B) The protected mitigation releases will be protected through the qualifying stream reach up to the amount of water that is appropriate for streamflows to preserve or improve the natural environment to a reasonable degree within the qualifying stream reach; and

(C) Diversions of the protected mitigation releases within the qualifying stream reach by exchanges, substitution plans, augmentation plans, or other means that cause a reduction in the protected mitigation releases within the qualifying stream reach, other than reductions caused by evaporation, transportation, and other losses, will be prevented; and

(VI) Through the dedication of the protected mitigation releases to the board under the procedures set forth in subsection (3) of this section, except as otherwise provided in this subsection (8), and through the water court decree approving the protected mitigation releases, the protected mitigation releases will serve a secondary instream beneficial use, specifically the preservation or improvement of the natural environment to a reasonable degree within the qualifying stream reach.

(b) As used in this subsection (8):

(I) “Board” means the Colorado water conservation board created in [section 37-60-102](#).

(II) “Mitigation release” means:

(A) The release of water from a water storage right stored in new reservoir capacity into a qualifying stream reach to reasonably avoid, minimize, or mitigate the impacts of the new reservoir capacity on fish and wildlife resources within the qualifying stream reach in accordance with a fish and wildlife mitigation plan approved under [section 37-60-122.2](#); and

(B) The redirection of the released water at or below the downstream termination point of the qualifying stream reach, either directly at a surface point of diversion or by a decreed in-priority exchange to an exchange-to point identified in the decreed in-priority exchange that is outside of the qualifying stream reach, for use by an owner for the decreed beneficial uses of that water storage right.

(III) “New reservoir capacity” means additional water storage capacity resulting from the construction of a new reservoir or a physical enlargement of an existing reservoir if the construction or physical enlargement is completed on or after August 8, 2018.

(IV) “Owner” means the person that owns the water storage right that is to provide the water for a protected mitigation release, and, in the case of a water storage right owned by a water conservancy district, water conservation district, municipality, special district, or mutual ditch company, includes the residents, allottees, members, customers, shareholders, or member ditch companies of that entity; and, in the case of a water storage right owned by an irrigation district, includes the landowners within the district.

(V) “Protected mitigation release” means the amount of water to be released for a mitigation release that:

(A) The board determines is appropriate for streamflows to preserve or improve the natural environment to a reasonable degree within an identified qualifying stream reach;

(B) Is approved by a water court decree pursuant to this subsection (8); and

(C) Is protected from diversion, exchange, or use by holders of conditional or vested water rights or other persons that cause a reduction in the protected mitigation release at any location within the qualifying stream reach, other than any reductions caused by evaporation, transportation, and other losses.

(VI) “Qualifying stream reach” means all or a portion of a natural stream of the state that is identified in a fish and wildlife mitigation plan approved under [section 37-60-122.2](#) and within which the board determines, and the water court decree approves in accordance with this subsection (8), that water from a protected mitigation release is appropriate for streamflows to preserve or improve the natural environment to a reasonable degree. A qualifying stream reach must be identified by an upstream point at which the protected mitigation release enters the natural stream and a downstream termination point.

(VII) “Surface point of diversion” means a structure that diverts surface water only. “Surface point of diversion” does not include:

(A) A structure that diverts groundwater, whether through a well, infiltration gallery, or other type of groundwater diversion structure; or

(B) Delivery into a facility used to recharge an alluvial aquifer.

(c)(I) An owner may, in accordance with and after complying with the requirements of this subsection (8), make a protected mitigation release.

(II) Holders of conditional or vested water rights or other persons shall not divert, exchange upon, or use a protected mitigation release within the qualifying stream reach unless the diversion, exchange, or use is fully augmented so that there is no reduction in the protected mitigation release at any location within the qualifying stream reach, other than reductions caused by evaporation, transportation, and other losses.

(III) The state engineer shall administer protected mitigation releases made in accordance with this subsection (8) and the terms and conditions of decrees approving protected mitigation releases.

(IV)(A) Except for reductions caused by evaporation, transportation, and other losses, and subject to subsections (8)(c)(IV)(B) and (8)(c)(IV)(C) of this section, an owner shall: Redivert all protected mitigation releases at or below the downstream termination point of the qualifying stream reach, either directly at a surface point of diversion or by a decreed in-priority exchange to an exchange-to point identified in the decreed in-priority exchange that is outside of the qualifying stream reach; and apply the water to the decreed beneficial uses of the water storage right that provides the water for the protected mitigation release.

(B) Except as provided in subsection (8)(c)(IV)(C) of this section, an owner may redivert water associated with protected mitigation releases in accordance with subsection (8)(c)(IV)(A) of this section by exchange into storage, which exchange shall be administered with a priority date no earlier than the date of approval of the fish and wildlife mitigation and enhancement plan pursuant to [section 37-60-122.2](#), and subsequently apply the water to the decreed beneficial uses of the water storage right that provides the water for the protected mitigation release.

(C) An owner shall not redirect water associated with protected mitigation releases by exchange through all or a portion of the qualifying stream reach or to the reservoir of origin.

(V) Water present in the qualifying stream reach, other than the protected mitigation releases, remains available to other water users for beneficial uses and may be diverted and beneficially used by other water users in accordance with the priority system and any relevant decree.

(VI) The procedures set forth in this subsection (8) apply only to the adjudication of proposed protected mitigation releases from new reservoir capacity and do not alter the procedures or legal standards applicable to any other type of water court application.

(VII) An application for approval of a proposed protected mitigation release filed in accordance with this subsection (8) must not include, and shall not be consolidated or joined with, any other water court application.

(d) An owner that intends to make protected mitigation releases in accordance with this subsection (8) shall, before any such releases may be administered as protected mitigation releases:

(I) Dedicate the proposed protected mitigation releases to the board by grant, donation, or other contractual agreement in accordance with subsections (3) and (8)(e) of this section;

(II) Agree to make the proposed protected mitigation releases available to the board within the qualifying stream reach;

(III) With the board as a co-applicant, file an application in water court in the water division in which the new reservoir capacity is located, seeking approval of the proposed protected mitigation releases, by the last day of the twelfth month following the month in which the new reservoir capacity is certified for storage by the state engineer; except that an application must not include any other claim for relief; and

(IV) Obtain a final water court decree approving the protected mitigation releases.

(e)(I) Except as otherwise provided in this subsection (8)(e), a dedication to the board pursuant to subsection (8)(d)(I) of this section of an interest in water yielded from a water storage right that will be stored in new reservoir capacity is subject to subsection (3) of this section for the dedication of an interest in water to the board, including the requirement in subsection (3) of this section that the board make a determination that the proposed protected mitigation releases are appropriate for streamflows to preserve or improve the natural environment to a reasonable degree within the qualifying stream reach.

(II) The board's contractual interest in water acquired in accordance with this subsection (8) may be yielded from a water right that is either absolute or conditional at the time of acquisition.

(III) To obtain a decreed right to use proposed protected mitigation releases for instream flow purposes, the owner and the board need not file an application with the water court to change the water storage right from which the proposed protected mitigation releases are to be made.

(IV) The board need not hold a decreed appropriation for instream flows within the qualifying stream reach as a prerequisite for an owner to dedicate proposed protected mitigation releases to the board in accordance with this subsection (8).

(f)(I) To satisfy the requirements of subsections (8)(d)(III) and (8)(d)(IV) of this section, the board and the owner must file a water court application as co-applicants pursuant to subsection (8)(d)(III) of this section. The water court shall enter a decree approving the proposed protected mitigation releases if:

(A) The board demonstrates that it has duly determined in accordance with this subsection (8) and with subsection (3) of this section that the proposed protected mitigation releases are appropriate for streamflows to preserve or improve the natural environment to a reasonable degree within the qualifying stream reach. If a party challenges the board's determination in the water court proceeding, the board shall assemble and submit to the court the complete administrative record upon which the board made the determination. The court shall base its review of the board's determination on the administrative record, using the criteria set forth in [section 24-4-106\(6\)](#) and [\(7\)](#).

(B) The owner proves that the proposed protected mitigation releases: Will not cause an expansion of use beyond the limits of use of the decreed water storage right from which the mitigation releases are to be made; will not cause injury to vested water rights, decreed conditional water rights, subsequently adjudicated water rights that are the subject of a pending water court application filed before August 8, 2018, or other water users' uses or exchanges of water being made pursuant to appropriation or practices in existence on the date of the filing of the application for approval of the proposed protected mitigation releases; are administrable by the division engineer; and have been dedicated to and approved by the board in compliance with the requirements and procedures of subsection (8)(e) of this section.

(II) For purposes of determining injury pursuant to subsection (8)(f)(I)(B) of this section, the inability of other water users to divert, exchange upon, or use the proposed protected mitigation releases within the qualifying stream reach shall not be considered injury.

(III) The water court shall not requantify the water storage right from which the protected mitigation releases are proposed to be made.

(IV) A decree approving a protected mitigation release must contain the terms and conditions necessary to prevent injury to other water rights, prevent the expansion of use of the decreed water storage right from which the protected mitigation release is to be made, and ensure that the protected mitigation releases are administrable by the division engineer, including, if necessary, to prevent injury or expansion of use of the decreed water storage right from which the protected mitigation release is to be made, terms rejecting or decreasing the proposed flow rate of the protected mitigation releases or the qualifying stream reach. All such decrees must also specifically identify the timing and rate of the protected mitigation releases, the qualifying stream reach, and the flow rate that is appropriate to preserve or improve the natural environment to a reasonable degree within the qualifying stream reach. For protected mitigation releases that are to be exchanged into storage in accordance with subsection (8)(c)(IV)(B) of this section, the decree must specify that the exchange to storage be administered with a priority date that is no earlier than the date of the approval of the fish and wildlife mitigation and enhancement plan pursuant to [section 37-60-122.2](#).

(V) An owner shall erect, maintain, and repair suitable and proper measuring devices as required by [section 37-84-113](#) and by the decree approving the protected mitigation releases and as ordered by the state or division engineer. Additionally, the

owner shall maintain records of the quantity and rate of release of the protected mitigation releases and the quantity and rate of diversion of the protected mitigation releases that are rediverted for subsequent application to beneficial use.

(g) If operation of a protected mitigation release under this subsection (8) requires the making of physical modifications to an existing water diversion structure within the qualifying stream reach to allow the protected mitigation release to bypass the existing water diversion structure, the owner of the water storage right used to make the protected mitigation release shall bear all reasonable construction costs associated with the physical modifications and all reasonable operational and maintenance costs incurred by the owner of the existing water diversion structure that would not have been incurred in the absence of the physical modifications to the structure.

(h) A determination under [section 37-60-122.2](#) that releases of water from new reservoir capacity will help to reasonably avoid, minimize, or mitigate the impacts of the new reservoir capacity on fish and wildlife resources within the qualifying stream reach is evidence of the appropriateness of a protected mitigation release within the qualifying stream reach.

(i) A mitigation release shall not be protected or administered as a protected mitigation release:

(I) When the amount of the existing flow in the qualifying stream reach is such that addition of the protected mitigation release would exceed the streamflow rate set forth in the decree to be appropriate to preserve or improve the natural environment to a reasonable degree within the qualifying stream reach;

(II) Unless the owner is in compliance with:

(A) The measuring requirements of [section 37-84-113](#);

(B) The terms and conditions in the decree approving the protected mitigation release regarding the operation, maintenance, or repair of proper measuring devices; and

(C) An order by the state or division engineer regarding the operation, maintenance, or repair of proper measuring devices;

(III) When the owner is incapable of rediverting the protected mitigation release at or below the downstream termination point of the qualifying stream reach for application to a decreed beneficial use of the water storage right that is to provide the water for the protected mitigation release;

(IV) When the released water is within the natural stream at a location outside of the qualifying stream reach, including when the released water is between the downstream termination point of the qualifying stream reach and the point of rediversion; or

(V) When the owner is not otherwise in compliance with the terms of the decree approving the protected mitigation release.

(j) This subsection (8):

(I) Does not impair or in any way affect any water court decree, administrative authorization, or agreement that allows water to be stored, released, and administered for environmental, piscatorial, water quality, recreational, municipal, or other in-channel purposes, including the maintenance of dominion and control over the water releases from a specified reservoir;

(II) Is not intended to be the exclusive means of authorizing water to be stored, released, and administered for environmental, piscatorial, water quality, recreational, municipal, or other in-channel purposes, including the maintenance of dominion and control over the water released from a specific reservoir; and

(III) Does not authorize, restrict, or preclude future water rights, appropriations, administrative authorizations, or other agreements for the purposes listed in subsection (8)(j)(I) of this section.

Credits

Laws 1979, S.B.481, § 4; Laws 1981, S.B.414, § 1; Laws 1985, S.B.5, § 5; Laws 1986, S.B.91, § 1; Laws 1987, S.B.212, § 2. Amended by Laws 1994, S.B.94-54, § 1, eff. April 20, 1994; Laws 1996, S.B.96-64, § 1, eff. May 23, 1996; Laws 2000, Ch. 322, § 1, eff. June 1, 2000; Laws 2001, Ch. 305, § 1, eff. June 5, 2001; Laws 2002, Ch. 149, § 1, eff. Aug. 7, 2002; Laws 2003, Ch. 315, § 63, eff. May 22, 2003; Laws 2006, Ch. 197, § 1, eff. May 11, 2006; Laws 2008, Ch. 170, § 1, eff. Aug. 5, 2008; Laws 2008, Ch. 338, § 27, eff. May 29, 2008; Laws 2012, Ch. 208, § 161, eff. July 1, 2012; Laws 2013, Ch. 228, § 9, eff. May 15, 2013; Laws 2018, Ch. 125, § 1, eff. Aug. 8, 2018; Laws 2020, Ch. 73 (H.B. 20-1037), § 1, eff. Sept. 14, 2020.

Notes of Decisions (117)

C. R. S. A. § 37-92-102, CO ST § 37-92-102

Current through legislation effective July 1, 2025 of the First Regular Session, 75th General Assembly (2025). Some statute sections may be more current. See credits for details.

West's Colorado Revised Statutes Annotated
Title 37. Water and Irrigation
Water Rights and Irrigation
Water Right Determination and Administration
Article 92. Water Right Determination and Administration (Refs & Annos)
Part 3. Determination and Administration of Water Rights (Refs & Annos)

C.R.S.A. § 37-92-305

§ 37-92-305. Standards with respect to rulings of the referee and decisions of the water judge--definitions

Currentness

(1) In the determination of a water right the priority date awarded shall be that date on which the appropriation was initiated if the appropriation was completed with reasonable diligence. If the appropriation was not completed with reasonable diligence following the initiation thereof, then the priority date thereof shall be that date from which the appropriation was completed with reasonable diligence.

(2) Subject to the provisions of this article, a particular means or point of diversion of a water right may also serve as a point or means of diversion for another water right.

(3)(a) A change of water right, implementation of a rotational crop management contract, or plan for augmentation, including water exchange project, shall be approved if such change, contract, or plan will not injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right. In cases in which a statement of opposition has been filed, the applicant shall provide to the referee or to the water judge, as the case may be, a proposed ruling or decree to prevent such injurious effect in advance of any hearing on the merits of the application, and notice of such proposed ruling or decree shall be provided to all parties who have entered the proceedings. If it is determined that the proposed change, contract, or plan as presented in the application and the proposed ruling or decree would cause such injurious effect, the referee or the water judge, as the case may be, shall afford the applicant or any person opposed to the application an opportunity to propose terms or conditions that would prevent such injurious effect.

(b) Decrees for changes of water rights that implement a contract or agreement for a lease, loan, or donation of water, water rights, or interests in water to the Colorado water conservation board for instream flow use under [section 37-92-102\(3\)\(b\)](#) shall provide that the board or the lessor, lender, or donor of the water may bring about beneficial use of the historical consumptive use of the changed water right downstream of the instream flow reach as fully consumable reusable water, subject to such terms and conditions as the water court deems necessary to prevent injury to vested water rights or decreed conditional water rights.

(c) In determining the amount of historical consumptive use for a water right in division 1, 2, 3, 4, 5, or 6, the water judge shall not consider any decrease in use resulting from the following:

(I) The land on which the water from the water right has been historically applied is enrolled under a federal land conservation program;

(II) The nonuse or decrease in use of the water from the water right by its owner for a maximum of five years in any consecutive ten-year period as a result of participation in:

(A) A water conservation program, including a pilot program, approved in advance by a water conservation district, water district, water authority, or water conservancy district for lands that are within the entity's jurisdictional boundaries or by a state agency with explicit statutory jurisdiction over water conservation or water rights;

(B) A water conservation program, including a pilot program, established through formal written action or ordinance by a water district, water authority, or municipality or its municipal water supplier for lands that are within the entity's jurisdictional boundaries;

(C) An approved land fallowing program as provided by law in order to conserve water or to provide water for compact compliance; or

(D) A water banking program as provided by law; or

(III) Subject to subsection (3)(f) of this section, the decrease in use or nonuse of a water right owned by an electric utility in division 6 since January 1, 2019, that occurs during the period beginning January 1, 2019, and ending December 31, 2050; except that any water right, or portion of a water right, that is leased or loaned by the electric utility to a third party is not entitled to historical consumptive use protection pursuant to this section for the period that the water right, or portion of the water right, is subject to the lease or loan.

(d) Quantification of the historical consumptive use of a water right must be based on an analysis of the actual historical use of the water right for its decreed purposes during a representative study period that includes wet years, dry years, and average years. The representative study period:

(I) Must not include undecreed use of the subject water right; and

(II) Need not include every year of the entire history of the subject water right.

(e) If an application is for a change of that portion of a water right for which a previous change of water right has been judicially approved and for which the historical consumptive use was previously quantified, the water judge shall not reconsider or requantify the historical consumptive use. However, the water judge may, without requantifying the historical consumptive use, impose such terms and conditions on the future use of that portion of the water right that is the subject of the change as needed to limit the future consumptive use of that portion of the water right to the previously quantified historical consumptive use.

(f)(I) To qualify for historical consumptive use protection pursuant to subsection (3)(c)(III) of this section or to qualify for the exception to abandonment pursuant to [section 37-92-103\(2\)\(c\)](#), an electric utility that manages all units of a generating station in division 6 shall, for itself and on behalf of the other owners of the generating station, file with the division 6 water court an application seeking quantification of the historical consumptive use for the absolute direct flow water rights serving the

generating station. The application must be filed with the division 6 water court within one year after the date that the final unit of the generating station is taken offline.

(II) The application described in subsection (3)(f)(I) of this section is a claim for a determination of a water right, and the division 6 water court has jurisdiction to determine the historical consumptive use for the absolute direct flow water rights serving the generating station in accordance with this section using the standards and procedures set forth in [sections 37-92-302, 37-92-303, and 37-92-304](#) and this section, including standards and procedures related to notice and participation of opposers; except that a change of water right is not required as a prerequisite for the quantification of the historical consumptive use by the division 6 water court. If the division 6 water court enters a decree quantifying the historical consumptive use, subsection (3)(e) of this section applies to the absolute direct flow water rights.

(III) The quantification of the historical consumptive use by the division 6 water court described in this subsection (3)(f) may be used in a proceeding to change the water right if and only if the water right subject to the change will not be diverted to any location east of the continental divide or sold for use outside of the state of Colorado.

(3.5) Applications for a simple change in a surface point of diversion. (a) For purposes of this subsection (3.5):

(I) “Intervening surface diversion point or inflow” means any ditch diversion or other point of diversion for a decreed surface water right, point of replacement or point of diversion by exchange that is part of an existing decreed exchange, well or well field that is decreed to operate as a surface diversion, or point of inflow from a tributary surface stream.

(II) “Simple change in a surface point of diversion” means a change in the point of diversion from a decreed surface diversion point to a new surface diversion point that is not combined with and does not include any other type of change of water right and for which there is no intervening surface diversion point or inflow between the new point of diversion and the diversion point from which a change is being made. “Simple change in a surface point of diversion” does not include a change of point of diversion from below or within a stream reach for which there is an intervening surface diversion point or inflow or decreed instream flow right to an upstream location within or above that reach.

(b)(I) An application for a simple change in a surface point of diversion is subject to all provisions of this article, including [sections 37-92-302 to 37-92-305](#), except as specifically modified by this subsection (3.5).

(II) The procedures in this subsection (3.5) apply only to a simple change in a surface point of diversion and do not change the procedures or legal standards applicable to any other change of water right.

(III) An application for a simple change in a surface point of diversion may:

(A) Be made with respect to a change of point of diversion that has already been physically accomplished or with respect to a requested future change of point of diversion;

(B) Be made with respect to an absolute water right or a conditional water right; and

(C) Include one or more water rights that are to be diverted at the new point of diversion. The application must not include or be consolidated or joined with an action by the applicant seeking any other type of change of water right or diligence proceeding or application to make absolute with respect to the water right or rights included in the application.

(c) The applicant bears the initial burden in an application for a simple change in a surface point of diversion to prove, through the imposition of terms and conditions if necessary, that the simple change in a surface point of diversion will not:

(I) Result in diversion of a greater flow rate or amount of water than has been decreed to the water right and, without requantifying the water right, is physically and legally available at the diversion point from which a change is being made; or

(II) Injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right.

(d) If the applicant makes a prima facie showing with respect to the matters in paragraph (c) of this subsection (3.5), the case proceeds as a simple change in a surface point of diversion, the applicant has the burden of persuasion with respect to the elements of its case, including the matters in paragraph (c) of this subsection (3.5), and the standards of paragraph (e) of this subsection (3.5) apply. If the applicant does not make such a prima facie showing, the referee or water judge shall dismiss the application without prejudice to the applicant's filing an application for a change of water right that is not a simple change in a surface point of diversion.

(e) The following standards apply to a simple change in a surface point of diversion:

(I) There is a rebuttable presumption that a simple change in a surface point of diversion will not cause an enlargement of the historical use associated with the water rights being changed.

(II) The decree must not requantify the water rights for which the point of diversion is being changed.

(III) The applicant, in prosecuting the simple change in a surface point of diversion, is not required to:

(A) Prove that the water diverted at the new point of diversion can and will be diverted and put to use within a reasonable period of time;

(B) Prove compliance with the anti-speculation doctrine; or

(C) Provide or make a showing of future need imposed by the cases of *Pagosa Area Water and Sanitation District v. Trout Unlimited*, 219 P.3d 774 (Colo. 2009), or *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1 (Colo. 1996); except that nothing in this subsection (3.5) relieves the applicant or its successors in any pending or future diligence application from any of the requirements for demonstrating diligence in the development of a conditional water right changed pursuant to this subsection (3.5).

(3.6) **Correction to an established but erroneously described point of diversion--definitions.** (a) As used in this subsection (3.6):

(I) “Diverter” means the owner or user of a decreed water right.

(II) “Established but erroneously described point of diversion” means a point of diversion of either surface water or groundwater:

(A) That has been at the same physical location since the applicable decree or decrees confirmed the water right, unless it was relocated pursuant to [section 37-86-111](#) or, in the case of a well, relocated according to a valid well permit. A diversion that has been in the same physical location since the enactment of the “Adjudication Act of 1943”, which was repealed in 1969, has a rebuttable presumption of having been located at the same physical location since its inception.

(B) That is not located at the location specified in the applicable decree or decrees confirming the water right; and

(C) From which the diverter has diverted water with the intent to divert pursuant to the decree or decrees confirming the water right.

(b) A water right is deemed to be diverted at its decreed location and is not erroneously described if:

(I) With respect to a surface water diversion:

(A) The physical location of the point of diversion is within five hundred feet of the decreed location; and

(B) Neither a natural surface stream that is tributary to the diverted stream nor another surface water right is located between the decreed location and its physical location;

(II) With respect to a groundwater diversion, the physical location of the point of diversion is within two hundred feet of the decreed location, unless the decree specifies a lesser distance for acceptable variation in location.

(c) To proceed with a correction in point of diversion under this subsection (3.6) for an established but erroneously described point of diversion that is due to a clerical mistake in the decree, but does not fall within the three-year period set forth in [section 37-92-304\(10\)](#) for the water clerk to correct the mistake, the diverter of the established but erroneously described point of diversion may file a petition with the water clerk for correction of the clerical mistake within three years after the diverter became aware of the mistake. The same procedures set forth in [section 37-92-304\(10\)](#) apply to corrections in point of diversion under this paragraph (c).

(d)(I) To proceed with a correction in point of diversion under this subsection (3.6) for an established but erroneously described point of diversion that is not due to a clerical mistake in the decree, a diverter has the burden to prove by a preponderance of the evidence that a point of diversion is an established but erroneously described point of diversion.

(II) Except as specifically modified by this subsection (3.6), an application for a correction in an established but erroneously described point of diversion is subject to all provisions of this article, including [sections 37-92-302](#) to 37-92-305.

(III) The procedures in this subsection (3.6) apply only to a correction in an established but erroneously described point of diversion and do not alter the procedures or legal standards applicable to a change of water right.

(IV) A diverter may apply for a correction in an established but erroneously described point of diversion only:

(A) For a point of diversion that is already in place; and

(B) If one or more water rights are diverted at the corrected point of diversion.

(V) The application must not include or be consolidated or joined with an action by the applicant seeking any type of change of water right or diligence proceeding or application to make absolute with respect to the water right or rights included in the application.

(e) If an applicant proves the matters in paragraph (a) of this subsection (3.6) by a preponderance of the evidence, then there is a rebuttable presumption that a correction in an established but erroneously described point of diversion:

(I) Will not cause an enlargement of the historical use associated with a water right diverted at the point of diversion; and

(II) Does not injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right.

(f) If the applicant does not prove the matters in paragraph (a) of this subsection (3.6) or if the presumptions stated in this subsection (3.6) are successfully rebutted, the referee or water judge shall dismiss the application without prejudice to the applicant's filing an application for a change of water right.

(g) The following standards apply to a correction in an established but erroneously described point of diversion:

(I) The decree must not requantify the water rights for which the erroneously described point of diversion is being corrected;

(II) The applicant, in prosecuting the correction in the erroneously described point of diversion, is not required to:

(A) Prove that the water diverted at the corrected point of diversion can and will be diverted and put to use within a reasonable period of time;

(B) Prove compliance with the anti-speculation doctrine; or

(C) Provide or make a showing of future need imposed by the cases of *Pagosa Area Water and Sanitation District v. Trout Unlimited*, 219 P.3d 774 (Colo. 2009), or *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1 (Colo. 1996);

(III) The state engineer shall not curtail a diversion based solely on the fact that the point of diversion is erroneously described; and

(IV) Nothing in this subsection (3.6) modifies the state engineer's authority to make determinations regarding the administration of water rights and the distribution of water.

(h) During a change of water right case or an abandonment proceeding, if a point of diversion qualifies as an established but erroneously described point of diversion pursuant to this subsection (3.6), full consideration of the historical consumptive use of the water right at its physical location shall not be denied due solely to the fact that the point of diversion is not at its decreed location.

(4)(a) Terms and conditions to prevent injury as specified in subsection (3) of this section may include:

(I)(A) A limitation on the use of the water that is subject to the change, taking into consideration the historical use and the flexibility required by annual climatic differences.

(B) For purposes of determining lawful historical use, if a decree entered before January 1, 1937, establishes an irrigation water right and does not expressly limit the number of acres that the appropriator may irrigate under the water right, the lawful maximum amount of irrigated acreage equals the maximum amount of acreage irrigated in compliance with all express provisions of the decree during the first fifty years after entry of the original decree, unless a court of competent jurisdiction has entered a final judgment to the contrary. Irrigated acreage not exceeding the lawful maximum amount and located within a reasonable proximity to the ditch, including extensions and lateral delivery infrastructure, as constructed within the first fifty-year period after entry of the original decree, may be included in the historical average in an historical consumptive use analysis supporting a change of water right application.

(II) The relinquishment of part of the decree for which the change is sought or the relinquishment of other decrees owned by the applicant that are used by the applicant in conjunction with the decree for which the change has been requested, if necessary to prevent an enlargement upon the historical use or diminution of return flow to the detriment of other appropriators;

(III) A time limitation on the diversion of water for which the change is sought in terms of months per year;

(IV) If the application is for the implementation of a rotational crop management contract, separate annual historical consumptive use limits for the parcels to be rotated according to the historical consumptive use of such lands. To the extent that some or all of the water that is the subject of the contract is not utilized at a new place of use in a given year, such water may be utilized on the originally irrigated lands if so provided in the decree and contract and if the election to irrigate is made prior to the beginning of the irrigation season and applies to the entire irrigation season. A failure of a party to a rotational crop management contract who is not the owner of the irrigation water rights that are subject to the contract to put to beneficial use

the full amount of water that was decreed pursuant to the application for approval of the contract shall not be deemed to reduce the amount of historical consumptive use that the owner of the water rights has made of the rights.

(V) A term or condition that addresses decreases in water quality caused by a change in the type of use and permanent removal from irrigation of more than one thousand acre-feet of consumptive use per year that includes a change in the point of diversion, if the change would cause an exceedance or contribute to an existing exceedance of water quality standards established by the water quality control commission pursuant to [section 25-8-204, C.R.S.](#), in effect at the time of the application, or, if ordered by the court, subsequently adopted by the commission prior to the entry of the decree, for the stream segment at the original point of diversion. Under any such term or condition, the applicant shall be responsible for only that portion of the exceedance attributable to the proposed change. Any such term or condition and any activity to be taken in fulfillment thereof shall not be inconsistent with the “Colorado Water Quality Control Act”, ¹ article 8 of title 25, C.R.S., and rules promulgated pursuant to said act, and implementation of section 303(d) of the “Federal Water Pollution Control Act”² by the water quality control division. This subparagraph (V) shall not be interpreted to confer standing on any person to assert injury who would not otherwise have such standing.

(VI) Such other conditions as may be necessary to protect the vested rights of others.

(b) If the water judge approves the implementation of a rotational crop management contract, the rotational crop management contract shall be recorded with the clerk and recorder of the county in which the historically irrigated lands are located, and the water judge shall make affirmative findings that the implementation of the rotational crop management contract:

(I) Is capable of administration by the state and division engineers. In order to satisfy the requirement of this subparagraph (I), the water judge may require the applicant to provide signage and mapping of the lands not irrigated on an annual basis.

(II) Will neither expand the historical use of the original water rights nor change the return flow pattern from the historically irrigated land in a manner that will result in an injurious effect as specified in subsection (3) of this section; and

(III) Will comply with paragraph (a) of subsection (4.5) of this section with regard to potential soil erosion, revegetation, and weed management.

(c) With respect to a change-in-use application that seeks approval to change an absolute decreed irrigation water right used for agricultural purposes to an agricultural water protection water right, as described in subsection (19) of this section, the decree must:

(I) Quantify the historical diversions and historical consumptive use of the absolute decreed irrigation water right used for agricultural purposes pursuant to subsection (3) of this section;

(II) Quantify the return flows associated with the historical use of the water right in time, place, and amount;

(III) Provide terms and conditions, pursuant to paragraph (a) of this subsection (4), for a change in the use of the agricultural water protection water right pursuant to a substitute water supply plan, approved in accordance with [sections 37-92-308\(12\)](#)

and [37-80-123](#), including the return flow obligations in time, place, and amount that prevent material injury to other vested water rights and decreed conditional water rights;

(IV) In accordance with subparagraph (II) of paragraph (b) of subsection (19) of this section, allow an amount of the quantified historical consumptive portion of water subject to the changed agricultural water protection water right to be delivered to a point of diversion within the water division of historical use without designating the beneficial use to which the water will be applied. Delivery must be to a point of diversion that is approved by the state engineer in accordance with conditions:

(A) Set forth in [section 37-92-308\(12\)](#); and

(B) Developed by the state engineer pursuant to [section 37-80-123](#); and

(V) For a period that the water judge deems necessary and desirable to remedy or preclude injury and pursuant to [section 37-92-304\(6\)](#), be subject to retained jurisdiction by the water judge on the question of injury to other vested water rights.

(4.5)(a) The terms and conditions applicable to changes of use of water rights from agricultural irrigation purposes to other beneficial uses shall include reasonable provisions designed to accomplish the revegetation and noxious weed management of lands from which irrigation water is removed. The applicant may, at any time, request a final determination under the court's retained jurisdiction that no further application of water will be necessary in order to satisfy the revegetation provisions. Dry land agriculture may not be subject to revegetation order of the court.

(b)(I) If article 65.1 of title 24, C.R.S., is not applicable to a significant water development activity, the court may utilize the methods specified in this section to mitigate certain potential effects of such activity. Subject to the provisions of this article, a court may impose the following mitigation payments upon any person who files an application for removal of water as part of a significant water development activity:

(A) **Transition mitigation payment.** A transition mitigation payment shall equal the amount of the reduction in property tax revenues for property that is subject to taxation by an entity listed in [section 37-92-302\(3.5\)](#) that is attributable to a significant water development activity. Such payment shall be made on an annual basis in accordance with the repayment schedule established by the court unless the applicant and the taxing entities mutually agree on an alternate payment schedule. The county shall certify, as appropriate, to the change applicant each year the amount of mitigation payment due under this subparagraph (I). Any moneys collected pursuant to this sub-subparagraph (A) shall be distributed by the board of county commissioners of the county from which water is removed among the entities in the county in proportion to the percentage of their share of the total of property taxes for nonbonded indebtedness purposes.

(B) **Bonded indebtedness payment.** A bonded indebtedness payment shall be made on an annual basis in the same manner as mitigation payments and shall be based on the bonded indebtedness on the property that is to be removed from irrigation at the time the decree is entered. The bonded indebtedness payment shall be equal to the reduction in bond repayment revenues that is attributable to the removal of water as part of a significant water development activity. The court may identify such mitigation payment as part of the decree. Whenever an application for determination with respect to a change of water rights requires a payment pursuant to this sub-subparagraph (B), the board of county commissioners of the county from which water is removed shall distribute any moneys collected among the entities in the county having bonded indebtedness in proportion to the percentage of their share of the total of such indebtedness.

(II) Unless the court determines that a greater or lesser period of time would be appropriate based upon the evidence of record, the amount of the transition mitigation and bonded indebtedness payments shall be equal to the total reduction in revenues for a period of thirty years commencing upon the date of initial reductions in such revenues as a consequence of the removal of water associated with the significant water development activity.

(III) To the extent that there is an increase in the property tax or bonded indebtedness revenues after the date of the commencement of the payment obligations identified under sub-subparagraphs (A) and (B) of subparagraph (I) of this paragraph (b) as a consequence of a change in land use and accompanying modification of the assessed valuation of the land, such payment obligations shall be correspondingly reduced.

(IV) When determining the amount to be paid pursuant to this paragraph (b), if any, the court shall take into consideration any evidence of a beneficial impact to the county from which the water is to be diverted and shall adjust the amount of the payment accordingly.

(c) Paragraph (b) of this subsection (4.5) shall not apply to:

(I) Any removal of water involving water rights owned by the applicant prior to August 6, 2003; any removal of water that was accomplished prior to August 6, 2003; any removal of water for which an application for a change of water rights was pending in the water court on such date; or any removal of water for which a decree has been entered that continues to be subject to the water court's retained jurisdiction;

(II) Any removal of water when:

(A) Such change is undertaken by a water conservancy district, water conservation district, special district, ditch company, other ditch organization, or municipality;

(B) The water was beneficially used within the boundaries or service area of such entity before the removal; and

(C) The water will continue to be beneficially used within such entity's boundaries or service area after the removal; or

(III) Any removal of water where the new place of use is within a twenty-mile radius of the historic place of use, even though such new place is located within a different county. For purposes of this subparagraph (III), the distance between the historic place of use and the proposed new place of use shall be measured between the most proximate points in the respective areas.

(5) In the case of plans for augmentation including exchange, the supplier may take an equivalent amount of water at his point of diversion or storage if such water is available without impairing the rights of others. Any substituted water shall be of a quality and quantity so as to meet the requirements for which the water of the senior appropriator has normally been used, and such substituted water shall be accepted by the senior appropriator in substitution for water derived by the exercise of his decreed rights.

(6)(a) In the case of an application for determination of a water right or a conditional water right, a determination with respect to a change of a water right or approval of a plan for augmentation, which requires construction of a well, other than a well described in [section 37-90-137\(4\)](#), the referee or the water judge, as the case may be, shall consider the findings of the state engineer, made pursuant to [section 37-90-137](#), which granted or denied the well permit and the consultation report of the state engineer or division engineer submitted pursuant to [section 37-92-302\(2\)\(a\)](#). The referee or water judge may thereupon grant a final or conditional decree if the construction and use of any well proposed in the application will not injuriously affect the owner of, or persons entitled to use, water under a vested water right or decreed conditional water right. If the court grants a final or conditional decree, the state engineer shall issue a well permit. Except in cases in which the state engineer or division engineer is a party, all findings of fact contained in the consultation report concerning the presence or absence of injurious effect shall be presumptive as to such facts, subject to rebuttal by any party.

(b) In the case of wells described in [section 37-90-137\(4\)](#), the referee or water judge shall consider the state engineer's determination as to such groundwater as described in [section 37-92-302\(2\)](#) in lieu of findings made pursuant to [section 37-90-137](#), and shall require evidence of compliance with the provisions of [section 37-92-302\(2\)](#) regarding notice to persons with recorded interests in the overlying land. The state engineer's findings of fact contained within such determination shall be presumptive as to such facts, subject to rebuttal by any party.

(c) Any application in water division 3 that involves new withdrawals of groundwater that will affect the rate or direction of movement of water in the confined aquifer system shall be permitted pursuant to a plan of augmentation that, in addition to all other lawful requirements for such plans, shall recognize that unappropriated water is not made available and injury is not prevented as a result of the reduction of water consumption by nonirrigated native vegetation. In any such augmentation plan decree, the court shall also retain jurisdiction for the purpose of revising such decree to comply with the rules and regulations promulgated by the state engineer pursuant to [section 37-90-137\(12\)\(b\)\(I\)](#), as it existed prior to July 1, 2004.

(7) Prior to the cancellation or expiration of a conditional water right granted pursuant to a conditional decree, the court wherein such decree was granted shall give notice, within not less than sixty-three days nor more than ninety-one days, by certified or registered mail to all persons to whom such conditional right was granted, at the last-known address appearing on the records of such court.

(8)(a) Except as specified in paragraph (b) of this subsection (8), in reviewing a proposed plan for augmentation and in considering terms and conditions that may be necessary to avoid injury, the referee or the water judge shall consider the depletions from an applicant's use or proposed use of water, in quantity and in time, the amount and timing of augmentation water that would be provided by the applicant, and the existence, if any, of injury to any owner of or persons entitled to use water under a vested water right or a decreed conditional water right.

(b) As to decrees for plans for augmentation entered in water division 1 on or after August 5, 2009, the plan shall not require the replacement of out-of-priority depletions currently affecting the river caused by pumping that occurred prior to March 15, 1974. In the case of an amended plan for augmentation applied for pursuant to this paragraph (b), the water judge may review all of the terms and conditions of the plan.

(c) A plan for augmentation must be sufficient to permit the continuation of diversions when curtailment would otherwise be required to meet a valid senior call for water, to the extent that the applicant shall provide replacement water necessary to meet the lawful requirements of a senior diverter at the time and location and to the extent the senior diverter would be deprived of the senior diverter's lawful entitlement by the applicant's diversion. A proposed plan for augmentation that relies upon a supply

of augmentation water that, by contract or otherwise, is limited in duration shall not be denied solely upon the ground that the supply of augmentation water is limited in duration, if the terms and conditions of the plan prevent injury to vested water rights. The terms and conditions must require replacement of out-of-priority depletions that occur after any groundwater diversions cease. Decrees approving plans for augmentation must require that the state engineer curtail all out-of-priority diversions, the depletions from which are not so replaced as to prevent injury to vested water rights. A plan for augmentation, including a Colorado water conservation board plan to augment streamflows pursuant to [section 37-92-102](#), may provide procedures to allow additional or alternative sources of augmentation or replacement water, including water leased on a yearly or less frequent basis, to be used in the plan after the initial decree is entered if the use of the additional or alternative sources is part of a substitute water supply plan approved pursuant to [section 37-92-308](#) or if such sources are decreed for such use.

(9)(a) No claim for a water right may be recognized or a decree therefor granted except to the extent that the waters have been diverted, stored, or otherwise captured, possessed, and controlled and have been applied to a beneficial use, but nothing in this section shall affect appropriations by the state of Colorado for minimum streamflows as described in [section 37-92-103\(4\)](#).

(b) No claim for a conditional water right may be recognized or a decree therefor granted except to the extent that it is established that the waters can be and will be diverted, stored, or otherwise captured, possessed, and controlled and will be beneficially used and that the project can and will be completed with diligence and within a reasonable time.

(c) No water right or conditional water right for the storage of water in underground aquifers shall be recognized or decreed except to the extent water in such an aquifer has been placed there by other than natural means by a person having a conditional or decreed right to such water.

(10) If an application filed under [section 37-92-302](#) for approval of an existing exchange of water is approved, the original priority date or priority dates of the exchange shall be recognized and preserved unless such recognition or preservation would be contrary to the manner in which such exchange has been administered.

(11) Nontributary groundwater shall not be administered in accordance with priority of appropriation, and determinations of rights to nontributary groundwater need not include a date of initiation of the withdrawal project. Such determinations shall not require subsequent showings or findings of reasonable diligence, and such determinations entered prior to July 1, 1985, which require such showings or findings shall not be enforced to the extent of such diligence requirements on or after said date. The water judge shall retain jurisdiction as to determinations of groundwater from wells described in [section 37-90-137\(4\)](#) as necessary to provide for the adjustment of the annual amount of withdrawal allowed to conform to actual local aquifer characteristics from adequate information obtained from well drilling or test holes. Such decree shall then control the determination of the quantity of annual withdrawal allowed in the well permit as provided in [section 37-90-137\(4\)](#). Rights to the use of groundwater from wells described in [section 37-90-137\(4\)](#) pursuant to all such determinations shall be deemed to be vested property rights; except that nothing in this section shall preclude the general assembly from authorizing or imposing limitations on the exercise of such rights for preventing waste, promoting beneficial use, and requiring reasonable conservation of such groundwater.

(12)(a) In determining the quantity of water required in an augmentation plan to replace evaporation from groundwater exposed to the atmosphere in connection with the extraction of sand and gravel by open mining as defined in [section 34-32-103\(9\)](#), C.R.S., there shall be no requirement to replace the amount of historic natural depletion to the waters of the state, if any, caused by the preexisting natural vegetative cover on the surface of the area which will be, or which has been, permanently replaced by an open water surface. The applicant shall bear the burden of proving the historic natural depletion.

(b) No person who obtains or operates a plan for augmentation or plan of substitute supply prior to July 1, 1989, shall be required to make replacement for the depletions from evaporation exempted in this subsection (12) or otherwise replace water for increased calls which may result therefrom.

(c) In determining the quantity of water required in an augmentation plan to replace stream depletions in connection with any mining operation as defined in [section 34-32-103\(8\), C.R.S.](#), for which a reclamation permit has been obtained as set forth in [section 34-32-109, C.R.S.](#), there is no requirement to replace the amount of historic natural depletion to the waters of the state, if any, caused by the preexisting natural vegetative cover and evaporation on the surface of the area that will be, or that has been, eliminated or made impermeable as part of the permitted mining operation. The applicant bears the burden of proving the historic natural depletion.

(13)(a) The water court shall consider the findings of fact made by the Colorado water conservation board pursuant to [section 37-92-102\(6\)\(b\)](#) regarding a recreational in-channel diversion, which findings shall be presumptive as to such facts, subject to rebuttal by any party. In addition, the water court shall consider evidence and make affirmative findings that the recreational in-channel diversion will:

(I) Not materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements;

(II) Promote maximum utilization of waters of the state;

(III) Include only that reach of stream that is appropriate for the intended use;

(IV) Be accessible to the public for the recreational in-channel use proposed; and

(V) Not cause material injury to instream flow water rights appropriated pursuant to [section 37-92-102\(3\)](#) and (4).

(b) In determining whether the intended recreation experience is reasonable and the claimed amount is the appropriate flow for any period, the water court shall consider all of the factors that bear on the reasonableness of the claim, including the flow needed to accomplish the claimed recreational use, benefits to the community, the intent of the appropriator, stream size and characteristics, and total streamflow available at the control structures during the period or any subperiods for which the application is made.

(c) If a water court determines that a proposed recreational in-channel diversion would materially impair the ability of Colorado to fully develop and place to consumptive beneficial use its compact entitlements, the court shall deny the application.

(d) In addition to determining the minimum amount of streamflow to serve the applicant's intended and specified reasonable recreation experience, the water court shall make a finding in the decree as to the flow rate below which there is no longer any beneficial use of the water at the control structures for the decreed purposes.

(e) If the other elements of the appropriation are satisfied, the decree shall specify the total volume of water represented by the flow rates decreed for the recreational in-channel diversion. For purposes of this subsection (13), the “total volume of water represented by the flow rates decreed for the recreational in-channel diversion” means the sum of the flow rates claimed in cubic feet per second for each day on which a claim is made multiplied by 1.98.

(f) If the court determines that the total volume of water represented by the flow rates decreed for the recreational in-channel diversion exceeds fifty percent of the sum of the total average historical volume of water for the stream segment where the recreational in-channel diversion is located for each day on which a claim is made, the decree shall:

(I) Specify that the state engineer shall not administer a call for the recreational in-channel diversion unless the call would result in at least eighty-five percent of the decreed flow rate for the applicable time period;

(II) Limit the recreational in-channel diversion to no more than three time periods; and

(III) Specify that each time period is limited to one flow rate.

(14) No decree shall be entered adjudicating a change of conditional water rights to a recreational in-channel diversion.

(15) Water rights for recreational in-channel diversions, when held by a municipality or others, shall not constitute a use of water for domestic purposes as described in [section 6 of article XVI of the state constitution](#).

(16) In the case of an application for recreational in-channel diversions filed by a county, municipality, city and county, water district, water and sanitation district, water conservation district, or water conservancy district filed on or after January 1, 2001, the applicant shall retain its original priority date for such a right, but shall submit a copy of the application to the Colorado water conservation board for review and recommendation as provided in [section 37-92-102\(6\)](#). The board's recommendation shall become a part of the record to be considered by the water court as provided in subsection (13) of this section.

(17)(a) Applicants for approval of a rotational crop management contract shall pay the state engineer the following fees:

(I) An application fee of one thousand seven hundred thirty-four dollars;

(II) A fee of six hundred seventeen dollars that is due annually beginning one year after submittal of the application until the application has been decreed by the water judge pursuant to [section 37-92-308\(4\)](#); and

(III) An annual fee of three hundred dollars per year after the application has been decreed.

(b) The state engineer shall transmit the fees to the state treasurer, who shall deposit them in the water resources cash fund created in [section 37-80-111.7\(1\)](#).

(18) In the case of an augmentation plan that includes the construction of a recharge structure, the division engineer shall provide, as part of the summary of consultation report described in [section 37-92-302\(4\)](#), an analysis of potential changes in the groundwater levels downgradient of the proposed recharge structure resulting from the operation of the recharge structure, and the court and referee shall consider the division engineer's analysis.

(19) **Agricultural water protection--definitions.** (a)(I) After the state engineer's proposed rules promulgated under [section 37-80-123](#) are reviewed and finalized pursuant to [section 37-80-123\(1\)\(c\)](#) and after the Colorado water conservation board has finalized the criteria and guidelines developed pursuant to [section 37-60-133](#), the owner of an absolute decreed irrigation water right used for agricultural purposes may apply in water court to change the use of the water right to an agricultural water protection water right. As used in this section, an "agricultural water protection water right" means a water right decreed to allow the lease, loan, or trade of up to fifty percent of the water subject to the water right.

(II) After a person has obtained a decreed agricultural water protection water right, the person may apply for substitute water supply plan approval pursuant to [section 37-92-308\(12\)](#).

(b) If the owner of a decreed agricultural water protection water right obtains a substitute water supply plan pursuant to [section 37-92-308\(12\)](#), the agricultural water protection water right is subject to the following conditions:

(I) The owner of a decreed agricultural water protection water right must comply with the terms of the decree governing the point of diversion where the leased, loaned, or traded water is being delivered;

(II) The owner may lease, loan, or trade up to fifty percent of the quantified historical consumptive use portion of the agricultural water protection water right;

(III) Any amount of water not being leased, loaned, or traded must continue to be used for agricultural purposes:

(A) On the property historically decreed to be served by the original absolute decreed irrigation water right; or

(B) For as long as the other portion of water is being leased, loaned, or exchanged, on another property served by the same ditch system;

(IV) The owner of the agricultural water protection water right is required to participate in one or more of the following programs:

(A) As established by the federal government, the state, a subdivision of the state, or a nonprofit organization, conservation programs that conserve the land historically served by the irrigation water right, which programs include Colorado's conservation easement program established in article 30.5 of title 38, C.R.S., the United States fish and wildlife service easement program, the Natural Resources Conservation Services easement program, the Colorado division of parks and wildlife easement program, and a county open space easement program; or

(B) An agricultural water protection program designed to assure compliance with the terms of subparagraph (III) of this paragraph (b). The program must be sponsored and operated by an eligible entity through a formal action or ordinance and in

compliance with minimum criteria and guidelines established by the Colorado water conservation board pursuant to [section 37-60-133](#). An eligible entity may enroll agricultural water protection water rights only from a water right historically decreed within the entity's geographic boundary.

(V) If the owner's participation in a conservation program pursuant to subparagraph (IV) of this paragraph (b) ceases, the owner's eligibility to transfer water subject to the agricultural water protection water right by lease, loan, or trade or to obtain a substitute water supply plan pursuant to [section 37-92-308\(12\)](#) is suspended, and the water must be used only for agricultural irrigation purposes on the property historically decreed to be served by the original absolute decreed irrigation water right until the owner participates in one of the conservation programs again; and

(VI) The owner shall not lease, loan, or trade water subject to the agricultural water protection water right outside of the water division where the historical consumptive use was located.

(c) As used in this subsection (19), an “eligible entity” means an entity that:

(I) Has geographic boundaries that are located entirely within the water division of the water right's historical place of use and are defined in an original or amended document governing the entity; and

(II) Is a water conservation district, water conservancy district, irrigation district, ditch or reservoir company, nonprofit water provider, or municipality.

(20) **Limited applicability of *St. Jude's Co. case*--legislative declaration.** The provisions in the Colorado supreme court's decision in *St. Jude's Co. v. Roaring Fork Club, LLC*, 351 P.3d 442 (Colo. 2015), interpreting [section 37-92-103\(4\)](#), do not apply to absolute and conditional water rights for which a decree was entered as of July 15, 2015. Rights which would be subject to the Colorado supreme court's interpretation of [section 37-92-103\(4\)](#) in the *St. Jude's Co.* case but for this subsection (20) are valid and shall be given full force and effect. Such rights may be maintained through findings of reasonable diligence and made absolute, and augmentation plans related to such rights may be approved, in accordance with Colorado law. Changes of such rights must be limited to changes in points of diversion made in accordance with the provisions of this section.

Credits

Laws 1975, S.B.285, § 1; Laws 1977, S.B.4, § 4; Laws 1979, S.B.481, § 6; Laws 1981, S.B.3, § 2; Laws 1985, S.B.5, § 8; Laws 1989, S.B.120, § 5; Laws 1989, S.B.166, § 1. Amended by Laws 1992, H.B.92-1204, § 3, eff. March 20, 1992; Laws 1992, S.B.92-92, § 2, eff. April 16, 1992; Laws 1996, H.B.96-1044, § 3, eff. April 16, 1996; Laws 1996, H.B.96-1252, § 2, eff. March 25, 1996; Laws 1998, Ch. 231, § 3, eff. April 30, 1998; Laws 2001, Ch. 305, § 3, eff. June 5, 2001; Laws 2003, Ch. 116, § 4, eff. Aug. 6, 2003; Laws 2003, Ch. 204, § 5, eff. April 30, 2003; Laws 2006, Ch. 197, § 3, eff. May 11, 2006; Laws 2006, Ch. 218, § 3, eff. May 25, 2006; Laws 2007, Ch. 15, § 1, eff. March 12, 2007; Laws 2008, Ch. 170, § 3, eff. Aug. 5, 2008; Laws 2009, Ch. 69, § 1, eff. Aug. 5, 2009; Laws 2012, Ch. 15, § 2, eff. Aug. 8, 2012; Laws 2012, Ch. 54, § 1, eff. March 22, 2012; Laws 2012, Ch. 197, § 8, eff. July 1, 2012; Laws 2012, Ch. 208, § 165, eff. July 1, 2012; Laws 2013, Ch. 55, § 2, eff. Aug. 7, 2013; Laws 2013, Ch. 107, § 1, eff. Aug. 7, 2013; Laws 2013, Ch. 242, § 2, eff. May 18, 2013; Laws 2013, Ch. 316, § 114, eff. Aug. 7, 2013; Laws 2015, Ch. 157, § 1, eff. May 4, 2015; Laws 2015, Ch. 235, § 2, eff. Aug. 5, 2015; Laws 2016, Ch. 175, § 3, eff. Aug. 10, 2016; Laws 2017, Ch. 189, § 1, eff. May 3, 2017; Laws 2017, Ch. 266, § 1, eff. Aug. 9, 2017; Laws 2020, Ch. 73 (H.B. 20-1037), § 2, eff. Sept. 14, 2020; Laws 2024, Ch. 276 (S.B. 24-197), § 6, eff. Aug. 7, 2024.

Notes of Decisions (583)

Footnotes

1 § 25-8-101 et seq.

2 33 U.S.C.A. § 1313.

C. R. S. A. § 37-92-305, CO ST § 37-92-305

Current through legislation effective July 1, 2025 of the First Regular Session, 75th General Assembly (2025). Some statute sections may be more current. See credits for details.

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MEMORANDUM



To: Peter Fleming, Brendon Langenhuizen, Andy Mueller, Jason Turner, Bruce Walters
From: Kristina Wynne, P.H. and John Shuler, P.H.
Subject: Preliminary Shoshone Historical Use Assessment –**DRAFT**
Job: 0808.06
Date: November 8, 2024

The purpose of this memorandum is to present an estimate of the historical use of the Shoshone Power Plant water rights (“Shoshone Water Right(s)”). The analysis of historical use will support the Colorado River Water Conservation District’s (the “River District’s”) efforts to ensure the permanency of these senior non-consumptive water rights by changing their approved use in Colorado Water Court to add an alternate use for instream flow purposes to the already decreed hydropower purposes. The Shoshone Water Rights are among the largest and most senior water rights on the mainstem of the Colorado River. Since the Shoshone Power Plant began operating in 1909, the non-consumptive Shoshone Water Rights have operated nearly continuously in a manner that maximizes power production and subsequently maintains return flows for downstream water rights, including irrigation uses in the Grand Valley, municipal demands along the Colorado River west of Glenwood Canyon, and other non-consumptive uses such as assisting in the maintenance of flows for the Upper Colorado Endangered Fish Recovery Program (the “Fish Recovery Program”) in the 15-Mile Reach.

The proposed change of use of the Shoshone Water Rights to include instream flow purposes will require the filing of an application with the Colorado Division 5 Water Court. Such applications are required by statute to be supported by technical determinations of the historical (in this case, non-consumptive) use of the subject water right to ensure that the water right is not expanded, that historical streamflow patterns and return flows are maintained, and that the change of use prevents injury to other water rights. The historical use and yield of the water rights are ultimately determined as part of the Water Court process. Because the River District, Public Service Company of Colorado (“PSCo”), and the Colorado Water Conservation Board (“CWCB”)¹ have not yet filed a Water Court application for this change of use, and because various data sources are still being evaluated, a formal technical analysis has not yet been completed. This memorandum and the preliminary yield estimates presented herein are not intended for use in Water Court and may change in the future based upon additional data that may be evaluated or become available, and through ongoing discussions with the CWCB, PSCo, and potential opposers in the case. As with any change of water rights case, the River District seeks the ability to continue to utilize the

¹ Under statute, the CWCB is the only water user in the State of Colorado authorized to use water rights for instream flows and natural lake levels to preserve or improve the natural environment. Therefore, the CWCB will be a co-applicant with the River District and Public Service Company of Colorado when a Water Court application for a change of the Shoshone Water Rights is filed.

full Shoshone Water Rights at their decreed rates when legally and physically available, consistent with the historical use over a representative study period.

Background

The Shoshone Power Plant is located on the Colorado River in Glenwood Canyon just upstream of the City of Glenwood Springs, Colorado. The Shoshone Water Rights are diverted at an on-channel diversion dam (“Shoshone Dam”) that extends across the Colorado River, approximately eight miles downstream of the USGS stream gage located near Dotsero, Colorado (USGS Gage 09070500, the “Dotsero Gage”). Water is diverted at the Shoshone Dam into an approximately 2.5-mile concrete-lined tunnel to the power plant where it is delivered to twin penstocks before dropping a total of 167 feet through two turbines to generate electricity at the Shoshone Power Plant. As part of the facility’s normal operations to sluice sediment to prevent damage to the Shoshone Power Plant turbines and other infrastructure, some water is typically released from the tunnel at various locations. These uses are not consumed but must be diverted to optimize power generation at the Shoshone Power Plant, as discussed below. These diverted amounts return to the Colorado River un-depleted. The remaining water delivered to the penstocks and through the turbines to produce electricity is also not consumed, and therefore, all of the water diverted at the Shoshone Dam and delivered through the plant returns to the Colorado River at the Shoshone Power Plant outfall.

The Shoshone Power Plant is currently owned and operated by PSCo. In December 2023, the River District and PSCo entered into a purchase and sale agreement (“PSA”) for the Shoshone Water Rights. As described in the PSA, the River District, in coordination with the CWCB, seeks to permanently protect the Shoshone Water Rights by changing the decreed use of the water rights to include instream flow purposes in the reach between the Shoshone Dam and the Shoshone Power plant outfall. By adding an alternate beneficial use for instream flow purposes to the Shoshone Water Rights, the rights will continue to utilize their administrative priority dates while maintaining the historical flow regime of the Colorado River within the State of Colorado.

Shoshone Water Rights

The Shoshone Water Rights include two separate absolute water rights associated with the Shoshone Power Plant. The more senior, original Shoshone Water Right was decreed for 1,250 cubic feet per second (“cfs”) in Eagle County Civil Action No. 466 with a priority date of December 5, 1905. The entire 1,250 cfs was later made absolute in Eagle County Civil Action No. 553. The plant’s capacity and consequent demand for water later increased by 158 cfs to a total of 1,408 cfs in 1929. The junior Shoshone Water Right was decreed for 158 cfs in Eagle County Civil Action No. 1123 and is administered with a priority date of May 31, 1940. The total decreed amount of the two water rights is 1,408 cfs, which has historically been diverted at the full rate for at least a portion of nearly every year. The combined decreed uses for the senior and junior Shoshone Water Rights are for power production purposes which are non-consumptive. The Shoshone Water Rights are more particularly described in Table 1, below.

Table 1. Shoshone Power Plant Water Rights

| Case No. | Amount (cfs) | App. Date | Adj. Date | Previous Adj. Date | Priority Admin No. | Use |
|-------------------|--------------|-----------|-----------|--------------------|--------------------|---|
| CA-466, CA-553 | 1,250 | 1/7/1902 | 12/9/1907 | 12/5/1905 | 20427.18999 | Power manufacturing, mining, milling, traction, heating and lighting purposes |
| CA1123 | 158 | 5/15/1929 | 2/7/1956 | 5/31/1940 | 33023.28989 | Manufacturing and generation of electrical energy |

While records dating back to the initial diversion of the Shoshone Water Rights are not available, records available from the Colorado Division of Water Resources (“DWR”) indicate that the Shoshone Water Rights may have placed calls since at least the mid-1960s. Calls for the Shoshone Water Rights have been and are currently administered by the DWR at the Dotsero Gage, located approximately eight miles upstream from the Shoshone Dam and approximately 10.5 miles upstream from the Shoshone Power Plant.

Plant History

Construction of the Shoshone Power Plant began in 1906, and it first operated in 1909. The tunnel at the Shoshone Power Plant can carry up to 1,408 cfs, which supplies water to two turbines at the Shoshone Power Plant which are capable of producing a combined 15,000 kW of electricity. Based on our discussions with current and past Shoshone Power Plant operators and PSCo water resources staff, we understand that unless the turbines, the plant, or the tunnel were shut down for maintenance, inspections, or for some other unforeseen circumstance, the plant was always diverting water and producing energy to the greatest extent possible. In other words, there has consistently been demand for the full amount of power that the plant can produce, in part due to the fact that the Shoshone Power Plant is a relatively small contributor to the larger energy grid. As such, over its operational lifespan, the delivery of power produced at the Shoshone Power Plant has not required reductions associated with a drop in demand at any time. Repairs to the turbines have historically been made using the same or similar parts throughout the life of the plant resulting in relatively consistent capacities, efficiencies, and operations over time.

For the majority of its 115-year history, the Shoshone Power Plant has operated constantly and exercised the Shoshone Water Rights to produce power, with routine partial shutdowns for maintenance. Review of available maintenance records from PSCo will occur prior to finalizing any historical use yield analysis. We understand from discussions with present and former PSCo staff that at least since the early 1980s, routine maintenance typically occurred from one to three months during the winter when streamflow is low, and the operators could minimize lost power

production. During that time, maintenance of the turbines was reportedly achieved by shutting down one turbine while keeping the other turbine online.

Based on DWR records which date back to the mid-1970s, and Historic Users Pool (“HUP”) Annual Reports, which records span 1998-2014, the Shoshone Power Plant operated consistently with minor shutdowns (most often related to planned maintenance) until approximately 2002 when PSCo voluntarily reduced its call from 1,408 cfs to 1,000 cfs to allow upstream junior water rights to divert or store water from June 13, 2002 through June 26, 2002. This informal “Shoshone Call Relaxation” was again implemented in 2003, when PSCo voluntarily reduced the Shoshone Water Rights call to 704 cfs in the winter and spring despite the fact that there was physically available flow to divert at a greater rate for a portion of this period and there was demand for the power at the full capacity of the plant.² A formal call reduction agreement between PSCo and the Board of Water Commissioners for the City and County of Denver (“Denver Water”) was signed in 2007.

In addition to the negotiated and voluntary call reduction agreements described above, the frequency of days during which the Shoshone Power Plant was not operational and unable to exercise the Shoshone Water Rights significantly increased after 2003, mostly due to natural phenomena or unforeseen circumstances beyond the control of PSCo and for which it worked diligently to make repairs necessary to get the plant back online and continue to meet the power demand. These major outages include but are not limited to the following events:

- 2004: PSCo conducted a major automation of the power plant’s operations, which required the plant to be offline between mid-March and mid-July.
- 2007-2008: A major penstock rupture on June 20, 2007 resulted in the plant being offline until April 25, 2008. Operational issues following the penstock failure and repair persisted through water year 2008.
- 2010: Unscheduled maintenance was required due to a generator fire in late 2009.
- 2012: The plant operated with only one turbine to reduce the head at the Shoshone Dam to reduce seepage and other issues at the dam.
- 2013: Denver Water call relaxation agreement was in effect.
- 2020: The plant was shut down during the spring of 2020 due to a flood that required the replacement of the turbine exciters. The Grizzly Creek Fire started on August 10, 2020 and closed Glenwood Canyon for 13 days. The Shoshone Power Plant was offline following

² The 2003 informal “Shoshone Call Relaxation” was conducted in accordance with the March 21, 2003 “Agreement Concerning Proposed Operation of the Shoshone Power Call” between the River District and the City and County of Denver, acting by and through its Board of Water Commissioners.

the highway closure because powerlines destroyed during the fire had to be repaired or replaced.

- 2021: The plant was partially or fully offline for much of 2021 for reasons that included a large debris flow between the Shoshone Dam and the Shoshone Power Plant. Rock debris was stuck in the diversion tunnel.
- 2022: The plant shut down due to specialized turbine and casing inspections.
- 2023-2024: The plant shut down due to hazardous rockfall at the Shoshone Power Plant site and safety concerns for on-site staff and facilities. During the extended outage, the runner in Turbine A was sent off-site for significant repairs and refurbishment.

As shown in Table 2 below, reported days of full outages were much more frequent after 2004, indicating that the post-2003 period is not representative of the long-term historical use of the Shoshone Water Rights and the consistent operation of the plant due largely to extreme circumstances beyond the control of the plant operators.

Table 2: Summary of Days of Full Outage at the Shoshone Power Plant³

| Period | Total Days of Full Outage | Average Annual Days of Full Outage |
|----------------------|---------------------------|------------------------------------|
| 1975-2003 (29 years) | 89 | 3 |
| 2004-2022 (19 years) | 1,493 ⁴ | 77 |

Available Data Sources

There are two readily available data sources associated with the administration, diversion, and deliveries attributable to the Shoshone Water Rights: (1) records available from the DWR's Colorado Decision Support System ("CDSS") database which are characterized as "diversion records," and (2) administrative flow calculations quantified at the Dotsero Gage, where the Shoshone Water Rights are administered, as made available by the DWR through the Division Engineer's Office for Colorado Water Division 5. The CDSS records and administrative flow data are described in more detail below.

CDSS Records

Daily records for the Shoshone Power Plant from 1975 to present are available from the CDSS database. However, records for some periods are missing or appear to be repeated for many days

³ Full daily outage based on days with reported zero or no data in CDSS records.

⁴ Value based upon CDSS records. PSCo data suggests that there may have been up to approximately 30 days, primarily in November 2013, when the plant was operational to some degree. However, CDSS records report zero.

or months in a row. While these data entries are represented as “diversion records,” these records are not based on the measurement of diversions or deliveries to the Shoshone Power Plant during this period. Rather, we understand that these records are based on power production records kept by the plant operators which were then converted to a flow rate based on a typical hydropower equation and an assumed unit efficiency of 81%. Generating unit efficiency was measured and variable unit efficiency curves were developed in the 1930s but were not used to develop the records that are currently available from the CDSS database.

Like most diversion structures and water rights uses, all the water diverted at the Shoshone Dam upstream of the plant and delivered through the tunnel is necessary for optimum operation of the Shoshone Power Plant even though not all the water diverted runs through the turbines to produce power. Analogous to other losses that are inherently included in and necessary for the operation of a reasonably efficient system and utilization of a water right, water is released through various tunnel “adits” or outlets. The Shoshone Power Plant operators open low level valves in the tunnel at several adits to clear sediment from the tunnel before the water reaches the penstocks in order to protect the turbine runners and other power plant infrastructure from damage and excessive wear. Based on discussions with operators at the plant, water may be released through the adits for many weeks at a time and releases may equal up to several hundred cfs. While water released through the adits returns directly to the Colorado River and is not run through the turbines, it is necessary for these amounts to be diverted to allow power to be generated in the safe operation of the power plant.

Because the CDSS records are based only on power produced at the Shoshone Power Plant, the additional water that was required to be diverted to enable the beneficial purposes at the plant is not included in the record. As a result, the CDSS records are more reflective of historical deliveries to the turbines than historical diversions from the river. The CDSS records underestimate the total amount of water actually available and diverted at the dam and subsequently delivered through the tunnel. Therefore, reliance on the CDSS records alone may not adequately protect the return flows historically available to downstream junior water rights because the CDSS records do not include water that was necessarily diverted to achieve the end beneficial use and that was returned to the river without directly producing power.

An additional consideration of the CDSS records is that at times they include reservoir water released for downstream users to fill any remaining tunnel capacity. The Shoshone Power Plant historically diverted and created power using the physically available flow, up to the plant’s capacity, and the CDSS records inherently include at least some water that was released from upstream storage and bound for downstream use, such as support for the Fish Recovery Program in the 15-Mile Reach. This water, often referred to as “virtual pipeline water” or “shepherded water,” is water that the Shoshone Power Plant may physically divert but that it does not have the right to call for. Diversion of shepherded water at the Shoshone Power Plant was allowed by the Division Engineer, as the Shoshone Water Rights are used for non-consumptive power generation and the water diverted would still be available for downstream users. Although the shepherded water cannot be “called” for by the Shoshone Water Rights, the diversion and beneficial use of that water demonstrates that except for periods of reduced use or non-use described above, the Shoshone Power Plant has a constant demand for 1,408 cfs.

Administrative Flow Data

While the Shoshone Power Plant may divert water on a year-round basis through the plant up to its capacity at any time, the ability for the Shoshone Water Rights to place a call has historically been administered by the Division 5 Engineer's Office ("DEO") based on the available "administrative flow" or "natural flow" at the Dotsero Gage. The administrative flow is determined by the DEO based on information from the U.S. Bureau of Reclamation ("USBR") and other users to account for upstream reservoir releases that must be shepherded to users below the Shoshone Power Plant including, but not limited to, contract water and HUP water released from Green Mountain Reservoir for use in the Grand Valley and water released for the Fish Recovery Program from Lake Granby, Wolford Mountain Reservoir, or other upstream sources. The DEO is charged with ensuring that this shepherded water is delivered past downstream intervening diversions to the final place of use. The administrative flow is therefore equal to the measured streamflow at the Dotsero Gage less the shepherded water. Because releases of contract water, HUP water, and water from other upstream sources generally only occur during the late summer months, the administrative flow is generally equal to the measured flow at the Dotsero Gage except from July through October.

The administrative flow has been formally considered and enforced as part of the DEO's administration of the Colorado River since 1998, following the start of the Fish Recovery Program releases on the Upper Colorado River in 1997. Based upon preliminary review of USBR Colorado River operations records and other DWR records, it appears that contract releases made above the Shoshone Power Plant and bound for users below the plant were minimal prior to 1998. Administrative flow calculations were made available by the DEO from 2017-2022. All administrative flow records prior to that period (back to 1998) were calculated based on the same sources of data and the same processes used by the DEO.

We understand that, until the mid-1980s, the administrative practice of the DWR and/or USBR may have been to limit the administration of the Shoshone Water Rights call to 1,250 cfs under the senior Shoshone Water Right. However, based on conversations with PSCo administrators and plant operators, in addition to streamflow records available pre-1998, there was always a demand for the full 1,408 cfs when such water was legally and physically available. Moreover, written call records from the 1980s indicate that plant operators at the Shoshone Power Plant routinely requested that DWR administer the entire 1,408 cfs when demands were not being met at the power plant. Therefore, for purposes of this analysis, we assumed that the administrative flow prior to 1998 is equal to the measured flow at the Dotsero Gage, limited to 1,408 cfs.

There was always demand for power generated at the Shoshone Power Plant and therefore the administrative flow could always be utilized so long as the power plant was operating at capacity and provided such water was legally and physically available. The administrative flow includes all water necessary to operate the plant to generate electricity including water released from the tunnel via the adits for sediment sluicing and other uses consistent with reasonably efficient operations. Consequently, the administrative flow is the best representation of the actual historical use of the Shoshone Water Rights and also more accurately reflects the historical impact to upstream water users during times when the plant was operating. Moreover, the administrative flow also includes

100% of the return flows from the historical exercise of the Shoshone Water Rights, which will be required to be maintained in a change of water right to prevent injury to downstream users. Because the administrative flow is most representative of historical conditions at the Shoshone Dam, it is also the most appropriate basis for determining the amount of water available for the alternate instream flow use within the proposed instream flow reach.

Additional Data and Records

For purposes of the analysis described in this memorandum, we relied on records available on DWR's CDSS database and administrative flow data recorded at the Dotsero Gage. Moving forward, the analysis of historical use described in this memorandum may be supplemented as additional information and data is discovered.

Preliminary Yield Analysis

In any change of use in Colorado Water Court, the historical use of the subject water right must be quantified based on the actual historical beneficial use of the water right for its decreed purposes to prevent the expansion of the water right and prevent injury to other water rights holders upstream and downstream. As described above, and for purposes of this analysis, the administrative flow is more representative of historical conditions than the "delivery" records available from the CDSS database.

Study Period

While the CDSS records are not the most representative data to reflect what flow rate was diverted under the Shoshone Water Rights, these records are available on a daily basis back to 1975 and indicate when the plant was operating, and that water was being used for its decreed purposes. The CDSS records, along with notes regarding the operations at the plant and calls by the Shoshone Water Rights, also show that the ability to operate the plant and divert water to the fullest extent was reduced after 2003. As described above, this was due to various reasons that were beyond the control of PSCo and, therefore, the post-2003 period is not reflective of the long-term historical exercise of the Shoshone Water Rights. Pursuant to Colorado law (e.g., CRS § 37-92-305(3)(d)), the entire study period of available data need not be considered in a change case provided that the selected study period is sufficiently long to show the true historical use of the water right to be changed.

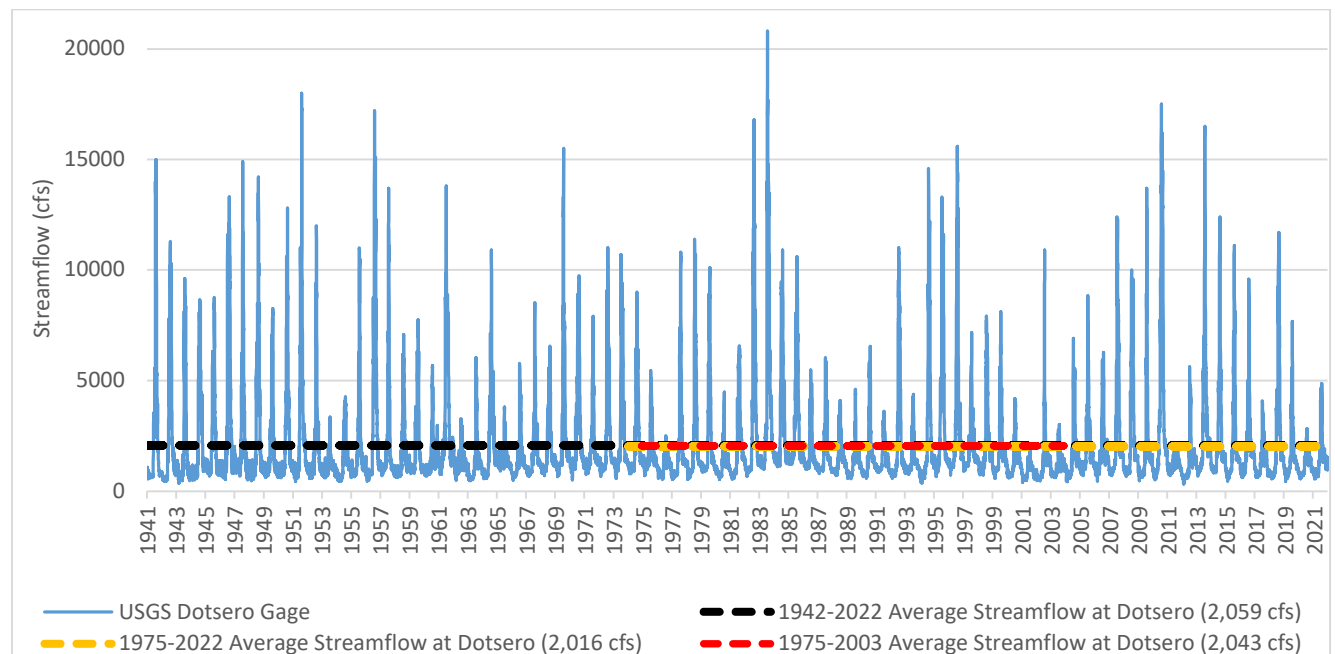
In other words, "quantification of the historical consumptive use of a water right must be based on an analysis of the actual historical use of the water right for its decreed purposes during a representative study period that includes wet years, dry years, and average years. The representative study period:

- (I) Must not include undecreed use of the subject water right; and
- (II) Need not include every year of the entire history of the subject water right."

Section 37-92-305(3)(d), C.R.S.

For the determination of the yield of the Shoshone Water Rights presented herein, a 1975 through 2003 water year study period was selected. This period represents years during which information regarding the operation of the plant is available and is reflective of a period of consistent operations at the plant and the exercise of the Shoshone Water Rights. The 29-year period of record also contains periods of wet, dry, and average hydrologic years, similar to years before and after the study period, as demonstrated below in Figure 1.

Figure 1 – Hydrograph of total Dotsero Gage streamflow with averages for different study periods to show that 1975-2003 study period is hydrologically representative.



Dotsero Gage data are available with minimal data gaps from 1942 to present. As shown in Figure 1, the entire period of record and the 1975-2003 period of record both include periods of wet, dry, and average streamflow years. Despite fluctuations in streamflow over the years, the average streamflow from 1942 to present is nearly identical to the average streamflow during the 1975-2003 study period (less than 1% difference). Similarly, the 1975-2022 average streamflow is approximately equal to the previous study periods (within approximately 2%). This indicates that any variance in average annual yield of diversions of the Shoshone Water Rights and plant operations after 2003 is not due to significant changes in physical supply available at Dotsero. Water diverted at the Shoshone Dam has historically fluctuated with the hydrograph given the nature of the operations, limited to the Shoshone Water Rights flow rate and the capacity of the plant.

Historical Use Quantification

Any change of a water right must ensure that the proposed changed use of the water right is not expanded and that historical streamflow patterns and return flows are maintained. This is most typically done through the imposition of decreed volumetric limits (which may be multi-year or annual averages) and return flow obligations. Volumetric limits can be determined by quantifying

the average historical use of a water right over a representative study period and may then be applied as a decreed limit to the future changed uses over a period of time consistent with the study period. Incorporating a running-average volumetric limitation based on a longer period of time allows a water right to operate with some flexibility and fluctuations in response to variable hydrology, just as it operated in the past, but prevents the expansion of the water right by limiting the running average annual diversion to the long-term historical average. Because the Shoshone Water Rights are non-consumptive water rights, maintaining the historical pattern of use will also maintain the historical return flows.

Therefore, we quantified the average annual yield of the Shoshone Water Rights for the representative study period of 1975-2003 by converting the daily administrative flow from 1998-2003 and the Dotsero Gage flow from 1975-1997 (limited to 1,408 cfs) to acre-feet (“ac-ft”) of water beneficially used and then summed the daily values over each month of the selected study period (i.e., 1975-2003). The monthly averages from 1975-2003 were then summed to determine an average annual historical yield.

To best reflect the historical exercise of the Shoshone Water Rights, and to maintain the historical streamflow patterns and return flows relied upon by downstream water users, it was necessary to make the following reasonable adjustments and assumptions regarding the administrative flow:

- As described above, the administrative flow record was estimated using methods confirmed by the DEO and DWR-provided data back to 1998. Information regarding any water shepherded past the Dotsero Gage is limited, though the volumes and daily flow rates of shepherded water would have been minimal and occurred only during the irrigation season. Therefore, for purposes of this analysis, we assumed that prior to 1998, the administrative flow is equal to the flow at the Dotsero Gage, with additional limitations described below.
- Daily flows included in the yield analysis are limited to the lesser of the administrative flow and the total 1,408 cfs available under the Shoshone Water Rights.
- While the administrative flow was determined for all days in the 1975-2003 study period, the Shoshone Water Rights could not take advantage of and beneficially use the flow during periods of outage at the plant. Therefore, days of full outage were excluded from the calculation of total yield. As shown in Table 2, during the 1975-2003 study period, there were 89 days of full outage, based upon days with no data or days with zero diversions in the CDSS records. Data which specifically indicate the periods of partial outages are not available and therefore no corresponding adjustments have been made to this analysis.
- During the 1975-2003 study period, the power plant operated consistently, with only brief periods of partial outage to address routine maintenance issues according to PSCo staff.

Utilizing the data described above, with the appropriate adjustments, our preliminary calculation of average annual yield for the 29-year study period of 1975-2003 is equal to 844,644 ac-ft. This value, when applied on a rolling 29-year average basis (i.e., not an annual volumetric limit) is an appropriate volumetric limit for the changed use of the Shoshone Water Rights. For purposes of comparison, the preliminary average annual yield presented here is less than the measured Dotsero

Gage flow (limited to 1,408 cfs). As shown in Table 3, the preliminary average annual yield is also significantly less than if the historical use was assumed to be the total Shoshone Water Rights of 1,408 cfs or the senior right of 1,250 cfs.

Table 3: Average Annual Yield Comparison for Study Period 1975-2003

| Data Source | Average annual yield (ac-ft) |
|--|------------------------------|
| Calculated Administrative Flow | 844,644 |
| Measured Dotsero Streamflow (limited to 1,408 cfs) | 857,696 |
| 1,408 cfs year-round | 1,019,360 |
| 1,250 cfs year-round | 904,972 |

It is important to note that the historical use of the Shoshone Water Rights fluctuated with historical hydrology. Additionally, the maximum administrative flow rate diverted at the plant over the 1975-2003 study period was equal to 1,408 cfs at least once in each month throughout the entire period of study (i.e., the administrative flow was equal to 1,408 cfs in at least one January, one February, etc. over the entire study period). Thus, the full decreed rate of flow should be available for both continued hydropower production and for instream flow use based on the actual historical diversion and use of the Shoshone Water Rights for their originally decreed purposes. However, because the full decreed rate was not continuously available on a daily basis in all months, the future use of the Shoshone Water Rights will be limited to the 29-year running average annual volume of use in order to prevent an expansion of the water right.

The yield estimate based upon the adjusted administrative flow record from 1975-2003 is reflective of a period of continuous exercise of the Shoshone Water Rights at the Shoshone Power Plant and the conditions on the mainstem of the Colorado River. Unlike the CDSS records, the administrative flow includes all water diverted that was necessary to generate power at the plant as well as the water that was returned to downstream users to prevent injury to vested water rights.

Conclusion

Under the PSA, the River District seeks to acquire the Shoshone Water Rights for the purpose of changing the decreed use of the water rights to include an alternate beneficial use by the CWCB for instream flow purposes. The change of use must be reflective of the historical beneficial use of the Shoshone Water Rights for the decreed non-consumptive uses and will require the continuation of historical streamflow patterns and return flows to the Colorado River that has occurred in conjunction with the consistent exercise of the Shoshone Water Rights.

For purposes of this analysis, adjusted administrative flows at the Dotsero Gage were used to determine the yield of the Shoshone Water Rights which is equal to a running 29-year annual average of 844,644 ac-ft during the 1975-2003 study period. This study period is representative of consistent operations of the Shoshone Power Plant and exercise of the Shoshone Water Rights and

excludes periods of extended unplanned outages that were outside of PSCo's control such as the 2007 penstock rupture, wildfire and subsequent debris flows in Glenwood Canyon, and other events. In addition, this historical average yield value is conservative because it does not include the virtual pipeline/shepherded water that was historically used by the Shoshone Power Plant to produce power. The yield analysis presented here is not only representative of the operation and beneficial use of the water rights necessary for hydropower production but also maintains the return flows resulting from diversions of these nonconsumptive water rights and preserves the historical streamflow regime on the Colorado River.

Ultimately, the historical yield of the water rights that may be changed for instream flow purposes will be determined through the Colorado Water Court process. Thus, the analysis of historical use described in this memorandum may be revised as additional information and data is discovered.

MEMORANDUM – DRAFT – SUBJECT TO REVISION

To: Colorado River District Staff and Counsel
From: Hydros Consulting, Inc.
Subject: Shoshone Power Plant Water Rights Yield Assessment
Date: September 11, 2024

Summary

The Colorado River District (River District) asked Hydros Consulting, Inc. (Hydros) to provide technical assistance in quantifying the yield or “pull” of the water rights associated with the Shoshone Power Plant (Shoshone), with the goal of understanding the impact of the Shoshone water rights on flows through the “15-Mile Reach”¹ near Palisade, Colorado and at the Colorado-Utah state line. To perform this analysis, Hydros used the State of Colorado’s StateMod water allocation and accounting model to assess impacts to river flows both with and without the Shoshone water rights being utilized. Notwithstanding the foregoing, this analysis is not intended to serve as an analysis of the historical use of the Shoshone water rights with respect to any proceeding in water court for a change in type of use for the Shoshone water rights. Instead, this analysis is provided to demonstrate the benefits of the Shoshone water rights on flows through the 15-Mile Reach.

The analysis indicates that continued exercise of the Shoshone water rights will result in significant benefits to the Colorado River through the 15-Mile Reach to the Colorado-Utah state line, and abandonment or disuse of those rights would dramatically reduce flows, particularly in drier years. Assuming full use of the Shoshone water rights, and continued growth of demands for consumptive uses in the upper mainstem Colorado River, the net annual benefit of the Shoshone call could be more than 80,000 acre-feet of water to the 15-Mile Reach in dry years. The benefit is even more pronounced during critically dry months when the Shoshone water rights are fully utilized. As shown in Table 7, flows in these critically dry months are as much as 29% higher (approximately 140 cfs) on average when the Shoshone water rights are being fully utilized. The benefits of continued exercise of the Shoshone water rights are not limited to critically dry periods, and an *average* flow increase of 6% - 9% (equal to approximately 78 cfs to 96 cfs) is expected across the driest 50% of *all* simulated monthly flows compared to flows without Shoshone.

This report first provides a background of the Shoshone water rights and the importance of the administration of those water rights on the Colorado River. Next, this report describes

¹ See, for example: <https://coloradowatertrust.org/project/15-mile-reach>.

the methodologies used to quantify the yield of the Shoshone water rights. Finally, a description of the various scenarios used to compare model runs with and without the Shoshone water rights and the results of those models are presented.

Background

The Shoshone Power Plant is a run-of-river hydroelectric power plant located on the Colorado River approximately nine miles east of Glenwood Springs, Colorado. The power plant has been in operation since the early 1900s and utilizes two water rights as described in Table 1. Together, the water rights total 1,408 cubic feet per second (cfs). As a run-of-river operation, the Shoshone hydroelectric plant has no consumptive use and no immediately identifiable impact on the river, other than a small forebay and reduced flows through a short section of Glenwood Canyon. The power plant's broader impact on the river, however, is at times significant. The Shoshone Call² will often limit the ability of junior users upstream of the power plant to divert water or will force those users to provide replacement water to offset their depletions. The beneficial effect of the Shoshone Call to river flows is also felt downstream of the power plant, as all of the water diverted through the plant's penstocks returns to the Colorado River and continues downstream, where it is available for diversion by other water users.

Table 1: Shoshone Power Plant Water Rights.

| Water Right | Amount [cfs] |
|---|--------------|
| Adjudication Date 12/9/1907; Admin. No.: 20427.18999 | 1,250 |
| Adjudication Date 2/7/1956; Admin. No.: 33023.28989 | 158 |

The River District is interested in acquiring the Shoshone water rights from Public Service Company of Colorado (PSCo). Model results demonstrate that protecting the Shoshone water rights would benefit flows through the 15-Mile Reach, which is critical habitat for endangered warm-water fish species. The River District and west slope water users have a number of operating agreements, leases, and other mechanisms in place to ensure that critical flows are maintained through the 15-Mile Reach.³ Failure to maintain these flows could lead to non-compliance with the Programmatic Biological Opinion and Record of Decision (PBO) regarding endangered fish species in the Colorado River basin. As with most western rivers, critically low flows are often associated with particularly dry hydrologic years, and with late summer and early fall months in *most* years, when demands are at their highest and the river is returning to baseflow conditions after the snowmelt runoff.

² Unless stated otherwise, "Shoshone Call" in this report refers to the full 1,408 cfs junior + senior call

³ See, for example: https://www.usbr.gov/gp/ecao/10825_final_ea_fonsi.pdf

Without active diversions of the Shoshone water rights, the impacts to the river in the future could be even greater. Growth of both transmountain diversions (TMDs) and in-basin uses by junior water users would likely result in additional reduction to river flows absent the Shoshone water rights being exercised.

Between 1975 and 2020, the Shoshone Power Plant diverted an annual average of approximately 668,000 acre-feet/year, according to State records on Colorado's Decision Support System (CDSS) website. Figure 1 below shows the average monthly diversions (1975-2020) as reported by the State of Colorado via CDSS (<https://dwr.state.co.us/Tools/Structures/5300584>). These average monthly values are shown in comparison to the monthly volumes *if the Shoshone water rights were being met 100% of the time*.⁴ Natural hydrologic shortages, particularly during winter months, will often prohibit Shoshone from realizing those full diversion amounts, even if they are calling for their full decreed amounts. Shoshone's diversions are non-consumptive, and the Shoshone water rights are senior to many upstream diversions for consumptive uses. As a result, the Shoshone Call has historically resulted in increased flows in the Colorado River above and below the Shoshone Power Plant.

⁴ The CDSS records are based on an equation relating power generation to flow through the turbine. It is believed these records may underestimate the actual volume of water delivered to and through the Shoshone powerplant due to rating curve discrepancies, system losses, and other factors. If historical diversions are in fact greater than reported through CDSS, we expect the benefit from continued use of the Shoshone Rights to increase. Water availability, particularly during fall and winter months, will often limit how much water Shoshone can actually divert.

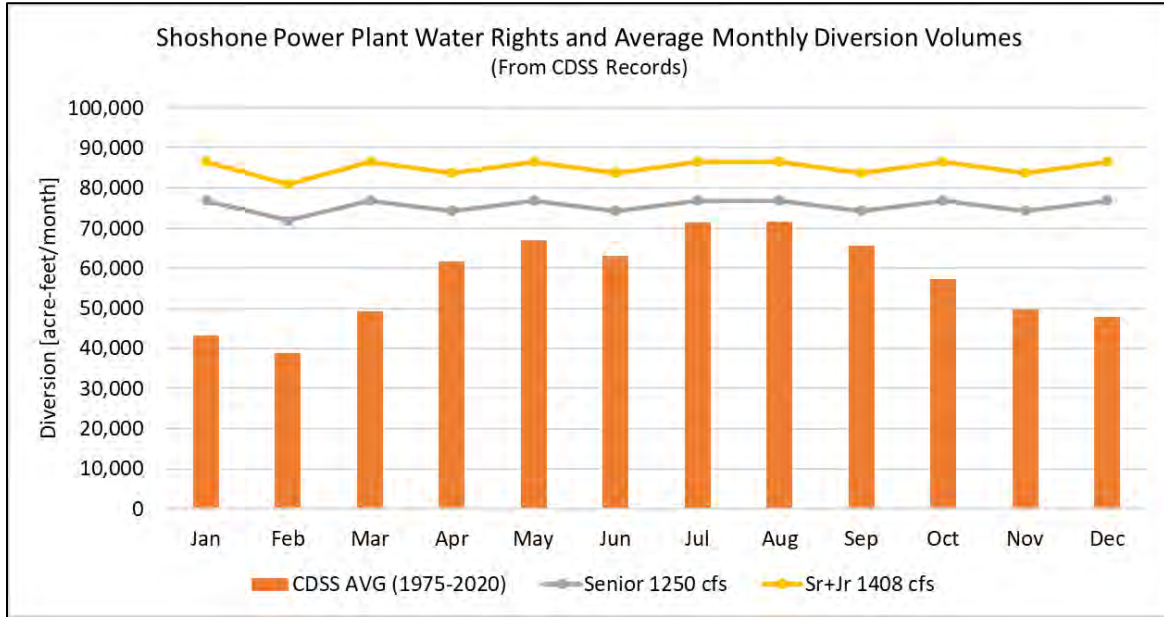


Figure 1: CDSS Shoshone Power Plant Average Monthly Diversions (1975-2020) and Maximum Decreed Diversion Rates.

Methodology

StateMod is a water rights administration and accounting model that simulates priority administration of Colorado water rights and operating protocols such as diversions to storage, releases, exchanges, and augmentation. It is often used to evaluate water availability for new water rights, or to evaluate potential impacts from changes in use of existing water rights. StateMod can simulate changes in diversions, releases, and other basin-wide water operations by senior and junior water rights both upstream and downstream of the Shoshone Power Plant if the exercise of the Shoshone water rights is modified. Of particular interest to this analysis are major downstream water rights such as the Grand Valley Project and Grand Valley Canal diversions, commonly referred to collectively as the “Cameo Call” diversions, and environmental flows through the 15-Mile Reach. The interaction between the Cameo Call and the Shoshone water rights is discussed in detail in Appendix C.

Using the Baseline model from the State of Colorado’s 2015 release of the Upper Colorado River Basin StateMod model (cm2015B⁵) with updates made as part of the Phase IV Risk Study (Hydros, 2023)⁶, Hydros evaluated the Shoshone water rights by performing a series of analyses comparing model runs with and without the Shoshone water rights active⁷. In addition to a “No Shoshone Call” scenario, several other scenarios were developed in which Shoshone’s water rights were active at different levels of demand. Using this modeling approach, the difference in model results between the activated and deactivated runs are used to illustrate the impact of the Shoshone water rights.

Scenario Descriptions

For this analysis, we compare four Shoshone operating policies together with both current and estimated future basin-wide demands. Analysis of results focuses on the “Stress-Test Period”⁸ (water years 1988-2013)⁹ as this includes several critically dry periods, particularly during the late 1980s, 2002-2005, and 2012-2013. Unique characteristics that

⁵ Obtained on 4/7/2022 from: <https://cdss.colorado.gov/software/statemod>

⁶ Technical Appendices A and B of the Phase IV Risk Study Report describe these modifications in detail. The purpose of the modifications was to enhance accuracy of simulation for the structures in the model that simulate the aggregated operations of numerous smaller diversions from tributaries, which is described in Appendix A, and to represent future incremental development of transmountain diversions and other demands to represent future conditions, which is described in Appendix B.

⁷ This analysis uses the publicly available version of StateMod simulating on a monthly timestep. The CWCB is currently developing a daily version of the mainstem Colorado River model in StateMod.

⁸ The “Stress Test” hydrology concept has been used extensively in Colorado River Basin planning efforts such as the Drought Contingency Plan (DCP) and other planning studies. The use of this period as the period of focus in this study should not be construed as a representative study period of the historical exercise of the Shoshone water rights for evaluation of the proposed change of use.

⁹ Water years start October 1st of the prior year and continue through September 30 of the year identified.

define each scenario include the demands assumed for Shoshone, the demands assumed for other water users in the basin, and whether a reduction in the Shoshone Call based upon a “call relaxation” agreement with Xcel (Xcel, 2007) is applied. The assumptions for each scenario are listed in Table 2.

Table 2. Scenario Definitions.

| Scenario | Shoshone Demands | Basin-Wide Demands | Call Relaxation |
|---|-------------------------|---------------------------|------------------------|
| Zero Shoshone Current | Zero ¹ | Current ² | None |
| Zero Shoshone Future | Zero | Future ³ | None |
| Senior Current | Senior ⁴ | Current | None |
| Senior Future | Senior | Future | None |
| Max Current | Maximum ⁵ | Current | None |
| Max Future | Maximum | Future | None |
| Senior Current w/ Relaxation Agreement | Senior | Current | 3-year ⁶ |
| Senior Future w/ Relaxation Agreement | Senior | Future | 3-year |
| Max Current w/ Relaxation Agreement | Maximum | Current | 3-year |
| Max Future w/ Relaxation Agreement | Maximum | Future | 3-year |

1) Scenarios with Zero demands for Shoshone are used to quantify the impact on river flows if the Shoshone water rights were abandoned or not exercised. This is the “worst case” scenario for river flows.

2) “Current” basin-wide demands apply to all water users other than Shoshone, and are the demands used in the CM2015B Baseline StateMod model of the Upper Colorado.

3) “Future” basin-wide demands apply to all water users other than Shoshone, and are the demands developed to represent future conditions identified in the Phase III Risk Study

4) “Senior” demands for Shoshone are based on only the senior diversion right of 1,250 cfs, totaling approximately 906,000 acre-feet per year.

5) “Maximum” demands for Shoshone assume full use of all decreed water rights for Shoshone, totaling approximately 1,019,000 acre-feet per year. These demands are used to estimate upper bounds on the impact of the Shoshone call (see Figure 1)

6) “3-year” Xcel Call Reduction scenarios apply the Call Relaxation in 2003, 2004, and 2013. 2003 and 2013 were years when the reduction historically occurred, and although not historically a call reduction year, Shoshone was not physically able to divert for part of 2004 so it is included here to mimic that historical reduction in demand.

Call Relaxation Agreement Background

In 2007, the City and County of Denver’s Board of Water Commissions and Xcel Energy entered into an agreement (2007 Agreement) to “relax” the Shoshone Call in years when the NRCS and Colorado River Basin Forecast Center predict that the April - July flow of the Colorado River at the Kremmling gage will be less than or equal to 85% of average (other requirements to trigger the call relaxation, including projections of defined storage content within Denver’s system, also apply, see 2007 Xcel Call Reduction [Xcel, 2007]). When the conditions for a “Call Relaxation” are met, Xcel will reduce the Shoshone Call

to a senior water right call of 704 cfs during the period of March 14th – May 20th (inclusive). 704 cfs is exactly half of the total decreed rate of 1,408 cfs diversion for the plant and represents the use of just one of the two turbines in the plant (see Table 1). A similar agreement was previously entered in 2003 (Xcel, 2003). Because the 2007 agreement is the most recent agreement, the terms of the 2007 Agreement are applied in this analysis for any year that includes a Call Relaxation. This agreement allows Denver Water and other junior water users to refill reservoirs and/or divert water through trans-basin or in-basin diversions during the pre-runoff period in exceedingly dry years when Shoshone would otherwise place an administrative call on those rights.

To simulate Call Relaxation under the 2007 Agreement, Hydros conducted model runs where the monthly demands in the Maximum Current and Maximum Future demand scenarios were reduced for the months of March, April, and May. To do this, the monthly diversion volumes were converted to a daily flow rate (assuming a uniform distribution for each month) and diversions for the period of March 14th - May 20th were limited to 704 cfs. The resulting reduction in demand is shown below in Figure 2. The daily diversion rates were then aggregated back to monthly volumes for use in the model (Table 3). The Call Relaxation scenarios were evaluated to determine incremental impacts from Call Relaxation under the 2007 Agreement during very dry years. For this analysis, we assume that the call reduction would occur in 2003, 2004, and 2013.¹⁰

¹⁰ 2003 and 2013 were years when the reduction historically occurred. The Shoshone Power Plant was not physically able to divert for part of 2004 due to infrastructure maintenance issues.

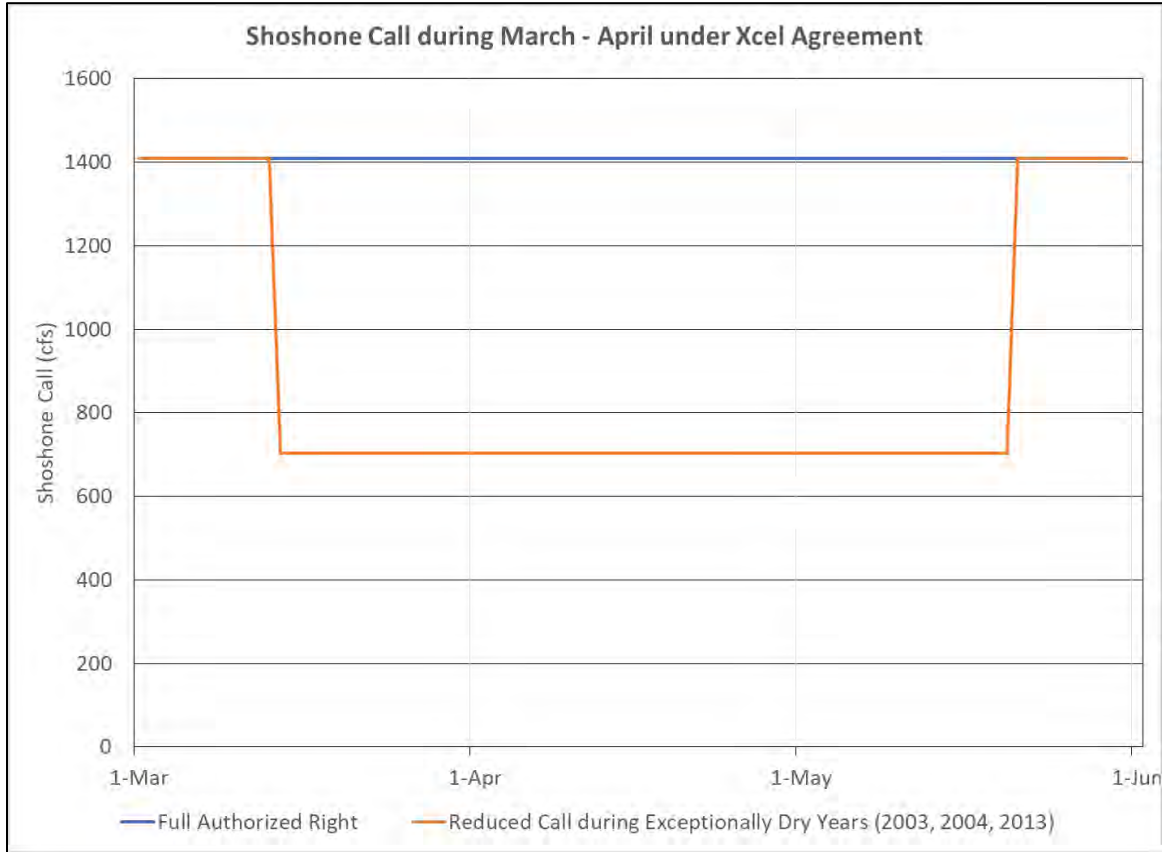


Figure 2: Demands with Call Relaxation applied to full use of both Shoshone rights.

Table 3: Change in Modeled Monthly Shoshone Call Volume (Demand) under the Call Relaxation Agreement.¹¹

| Monthly Volumes | Full Use (AF) | Call Relaxation (AF) |
|-----------------|---------------|----------------------|
| March | 86,576 | 61,441 |
| April | 83,783 | 41,892 |
| May | 86,576 | 58,648 |

Results

The following section provides a summary of results for the scenarios described above. Results focus on the Stress Test period of 1988-2013. Flows at both the Colorado-Utah state line and in the 15-Mile Reach were evaluated for each scenario, both as timeseries and via statistical analysis. Although some differences between impacts to the 15-Mile Reach and the state line were evident, the two locations had similar outcomes when comparing scenarios. As a result, and to simplify the discussion, the following summary

¹¹ Note that the relaxation agreement represents a change in demand (call) from Shoshone and the volumes shown would only be realized if water supply and river administrative conditions permit.

focuses on impacts in the 15-Mile Reach. In the following discussion of results, “yield” or “benefit” means the expected additional flow resulting from the Shoshone Power Plant and Call actively calling its decreed rights compared to expected changes in river flows without any active calls attributable to the Shoshone water rights.

The 15-Mile Reach is critical habitat for two threatened and two endangered warm-water fish species.¹² Flow recommendations have been developed by the U.S. Fish and Wildlife Service (USFWS) as part of the Programmatic EIS for the 15-Mile Reach. USFWS identified a minimum flow target of 810 cfs for dry hydrologic years for the months August-October. This is equivalent to approximately 50,000 acre-feet per month.

We examine the benefits of the Shoshone Call in two ways: first, we evaluate three example years to understand how the Shoshone Call impacts annual flow volumes in dry, average, and wet years; second, we look specifically at very low flow periods (months) in the 15-Mile Reach, to better understand how some of the most significant benefits of the Shoshone water rights are realized during times of critically low flows in this reach.

Appendix B to this report outlines the monthly distribution of yields in more detail and includes both quantifications of the typical variation in yields by month of the year. Appendix C describes the administrative conditions and operational mechanisms that lead to increased 15-Mile Reach flows during late-summer months.

Annual Examples

Antecedent conditions from one year to the next can cause significant differences in reservoir storage across scenarios with different administrative regimes or user demands. Varying levels of low initial storage between scenarios can distort or obscure the actual impacts of the Shoshone Call in the year of interest, particularly when comparing results across scenarios and multiple years. Wet, dry, and average example years were chosen based on having wet antecedent conditions in order to minimize differences between model scenarios caused by impacts of prior year drawdown in storage by junior water rights.

A table of annual results from the stress-test period (1988-2013) is attached in Appendix A as Table A-1. As shown in Table A-1, the example years are not necessarily the years with the highest yield within a particular hydrologic category. For example, we use 2010 as a typical average year. However, 1994 (another average year) has a simulated yield that is more than twice as large as 2010. Although the yield in 1994 is much larger than 2010,

¹² See <https://coloradoriverrecovery.org>

2010 is considered to be more representative of yields in an average hydrologic year due to a longer period of wet antecedent conditions leading up to that year.

Wet Year Example

1998 was chosen as the example year to represent wet conditions due to flows exceeding the 1988-2013 average by 33%, and due to antecedent conditions being wet or average for the prior 7 years. Yields for each scenario are tabulated in Table 4, where the yields for the scenarios with Call Relaxation under the 2007 Agreement are omitted due to the Call Relaxation not being active in the example year:

Table 4. Wet Year (1998) Example Yields.

| Scenario | 15-Mile Reach Yield (AF) |
|-----------------------|---------------------------------|
| Senior Current | 3,107 |
| Senior Future | 13,028 |
| Max Current | 13,359 |
| Max Future | 27,273 |

Average Year Example

2010 was chosen as the example year to represent average conditions, due to flows being within 4% of the 1988-2013 average, and due to antecedent conditions being wet or average for the prior 5 years. Yields for each scenario are tabulated in Table 5, where the yields for the scenarios with Call Relaxation under the 2007 Agreement are omitted due to the Call Relaxation not being active in the example year.

Table 5. Average Year (2010) Example Yields.

| Scenario | 15-Mile Reach Yield (AF) |
|-----------------------|---------------------------------|
| Senior Current | 5,376 |
| Senior Future | 22,608 |
| Max Current | 9,823 |
| Max Future | 27,324 |

Dry Year Example

2012 was chosen as the example year to represent dry conditions, due to flows being 48% below the 1988-2013 average, and due to antecedent conditions being wet or average for the prior 7 years. Yields for each scenario are tabulated in Table 6, where the yields for the scenarios with Call Relaxation under the 2007 Agreement are omitted due to the Call Relaxation not being active in the example year.

Table 6. Dry Year (2012) Example Yields.

| Scenario | 15-Mile Reach Yield (AF) |
|----------------|--------------------------|
| Senior Current | 41,184 |
| Senior Future | 55,080 |
| Max Current | 69,580 |
| Max Future | 86,143 |

Annual Examples Summary

The wet, average, and dry year examples above all show a net benefit from maintenance of the Shoshone Call. These examples include both the senior (1,250 cfs) and maximum (1,408 cfs) calls for the Shoshone water rights, as well as current and future basin demands. A few obvious trends are apparent from the results:

1. There is generally a larger benefit to flows through the 15-Mile Reach in dry years as compared to wet years. This benefit is magnified when considering that the years with the highest volumetric yield are generally also the years with the lowest total annual flows to begin with.
2. Fully exercising both the senior and junior Shoshone water rights results in larger yields, meaning the junior water right provides additional value in contributing flows to the 15-Mile Reach.
3. The benefit of maintaining the Shoshone Call will increase with time, as additional upstream junior rights are developed or are more fully exercised. The Shoshone Call will be an important “backstop” to protect flows through the 15-Mile Reach as those junior rights are fully utilized.

Monthly Flow Impacts

A second analysis of the results focuses on monthly flow volumes during the Stress Test period (1988-2013), and in particular on very low flow months in which the minimum flow targets for the 15-Mile Reach are not met. Under the “No Shoshone Call” StateMod run with current basin-wide demands, approximately 15% (46 of 312 months) of all months since 1988 would fail to meet the late irrigation season minimum flow target of 50,000 acre-feet per month. Of these 46 months, 30 are in the August-October period (the others include 8 Aprils, 1 May, 2 Junes, and 5 Julys). Table 7 below illustrates the average increase in flow under the Shoshone Call during these 46 critically dry months. Table 7 includes results under both current and forecasted future Upper Colorado basin demands across the four Shoshone Call scenarios outlined in Table 2.

Under current basin demands and full exercise of the Shoshone water rights, average flows during these critically dry months are 23% higher than flows with no Shoshone Call. Assuming an increment of future growth by both TMDs and in-basin uses, the benefit of the continued exercise of Shoshone water rights results in 29% more flow on average in these critically dry months. In some instances, the monthly flows with the Shoshone Call active *more than double* the expected flow through the 15-Mile Reach under a no-call scenario. The 2007 agreement for Call Relaxation has a relatively minor impact on the critically dry months' results in the 15-Mile Reach, because the agreement is only active in certain spring conditions, and most of the critical low-flow months are in the late summer and early fall.

Table 7. Increase in flow through the 15-Mile Reach during months with less than 50,000 acre-feet of water in the 1988-2013 simulation period. Increases are shown as monthly average flow and percent increase above flows modeled in the “No Shoshone Call” scenario.

| Average Monthly Flow Increase (cfs, %) 1988-2013 (Months < 50,000 AF) | | | | |
|---|---------------------------------|---|-----------------------------|---|
| <i>Basin Demand Level</i> | Senior Shoshone Right 1,250 cfs | Senior Shoshone Right 1,250 cfs w/ Relaxation | Max Shoshone Call 1,408 cfs | Max Shoshone Call 1,408 cfs w/ Relaxation |
| <i>Current</i> | 93 (18 %) | 90 (18 %) | 118 (23 %) | 115 (22 %) |
| <i>Future</i> | 123 (25 %) | 120 (25 %) | 140 (29 %) | 127 (26 %) |

The benefits of the Shoshone water rights are not limited to just the driest months. Table 8 shows the expected benefit in the driest quarter (25%) of all months in the 1988-2013 simulation period. While the average benefit across all these months is somewhat less than in the very driest of months, there is still a significant increase in average flow. Even considering the driest half of all the monthly flows in the simulation period (Table 9), there is a clear benefit from continued operation of the Shoshone water rights.

Table 8. Increase in flow through the 15-Mile Reach during the driest 25% of months in the 1988-2013 simulation period. Increases are shown as monthly average flow and percent increase over flows in the “No Shoshone Call” scenario.

| Average Monthly Flow Increase (cfs, %) 1988-2013 (Driest 25% of Months) | | | | |
|--|---------------------------------|---|-----------------------------|---|
| <i>Basin Demand Level</i> | Senior Shoshone Right 1,250 cfs | Senior Shoshone Right 1,250 cfs w/ Relaxation | Max Shoshone Call 1,408 cfs | Max Shoshone Call 1,408 cfs w/ Relaxation |
| <i>Current</i> | 88 (12 %) | 81 (11 %) | 121 (16 %) | 114 (15 %) |
| <i>Future</i> | 119 (17 %) | 114 (16 %) | 147 (21 %) | 136 (20 %) |

Table 9. Increase in flow through the 15-Mile Reach during the driest half (50%) of months in the 1988-2013 simulation period. Increases are shown as monthly average flow and percent increase above flows modeled in the “No Shoshone Call” scenario.

| Average Monthly Flow Increase (cfs, %) 1988-2013 (Driest 50% of Months) | | | | |
|--|---------------------------------|---|-----------------------------|---|
| <i>Basin Demand Level</i> | Senior Shoshone Right 1,250 cfs | Senior Shoshone Right 1,250 cfs w/ Relaxation | Max Shoshone Call 1,408 cfs | Max Shoshone Call 1,408 cfs w/ Relaxation |
| <i>Current</i> | 49 (4 %) | 45 (4 %) | 70 (6 %) | 67 (6 %) |
| <i>Future</i> | 76 (7 %) | 73 (7 %) | 97 (9 %) | 88 (8 %) |

Conclusions

This analysis of the Shoshone water rights indicates that abandonment or lack of enforcement of the water rights would have a significant detrimental effect on flows through the 15-Mile Reach of the Colorado River and likely would result in reduced flows at the Colorado-Utah state line. The impact of the Shoshone Call is particularly significant during dry years, such as in 2012, when the 15-Mile Reach would suffer a loss of approximately 41,000-86,000 acre-feet per year if the Shoshone water rights were no longer administered against upstream juniors.

This existing benefit of the Shoshone Call is critical to the continued success of the 15-Mile Reach PBO. If the Shoshone water rights were not exercised in the future, this would likely result in the further inability to satisfy the 15-Mile Reach PBO minimum target flows. Furthermore, the benefit of the Shoshone water rights is not only seen during these critical dry years. In average and wet years, flows in the 15-Mile Reach would be as much as 27,000 acre-feet lower (per year) without continued exercise of the Shoshone Water rights.

Of equal importance to the overall increase in annual flows through the 15-Mile Reach is the significant benefit to flows seen during late summer and early fall months, particularly in dry years, when the river is typically at its lowest. During these months, the Shoshone Call can double the monthly flow compared to flows without a Shoshone Call, and when averaged across all of the critically dry months, the Shoshone Call increases the monthly flows by 18% - 26% under the Senior Current and Future Max scenarios, respectively.

Future Work

As of early September 2024, the Colorado Water Conservation Board is working on an updated version of the Upper Colorado River Basin StateMod Model. This updated model will include revisions to operating rules, as well as a daily timestep version of the model. While that model was not publicly available when this analysis was performed, this memo will be updated *if warranted* after that model is made public.

References

- Hydros, 2023. Colorado River Risk Study Phase IV Draft Report. Prepared for the Colorado River District and the Southwestern Water Conservation District.
- Xcel, 2003. Agreement Concerning Proposed Operation of the Shoshone Power Call. Agreement between the City and County of Denver, acting by and through its Board of Water Commissioners, and the Colorado River Water Conservation District.
- Xcel, 2007. Agreement Concerning Reduction of Shoshone Call. Agreement between the City and County of Denver, acting by and through its Board of Water Commissioners, and Public Service Company of Colorado d/b/a Xcel Energy.

Appendix A: Increases inflow (aka “yield”) attributed to the Shoshone Call.

Table A-1. 15-Mile Reach Yields for Each Year in All Scenarios

| Year | Hydrology | Future Development Yield* (AF) | | | | Current Development Yield* (AF) | | | |
|------|-----------|--------------------------------|---------|--------|----------------|---------------------------------|---------|--------|--------|
| | | Senior | Senior- | Max | Max-Relaxation | Senior | Senior- | Max | Max- |
| 1988 | Average | 20,708 | 20,708 | 20,986 | 20,986 | 3,407 | 3,407 | - | - |
| 1989 | Dry | 28,262 | 28,262 | 30,325 | 30,325 | - | - | 2,109 | 2,109 |
| 1990 | Dry | 51,330 | 51,330 | 50,386 | 50,386 | 18,267 | 18,267 | 42,655 | 42,655 |
| 1991 | Average | 35,394 | 35,394 | 33,374 | 33,374 | 38,505 | 38,505 | 19,770 | 19,770 |
| 1992 | Average | 32,442 | 32,442 | 41,387 | 41,387 | 15,995 | 15,995 | 18,658 | 18,658 |
| 1993 | Wet | | - | - | - | - | - | - | - |
| 1994 | Average | 50,013 | 50,013 | 63,986 | 63,986 | 19,169 | 19,169 | 39,451 | 39,451 |
| 1995 | Wet | | - | - | - | - | - | - | - |
| 1996 | Wet | | - | - | - | 1,745 | 1,745 | - | - |
| 1997 | Wet | | - | - | - | - | - | - | - |
| 1998 | Wet | 13,028 | 13,028 | 27,273 | 27,273 | 3,107 | 3,107 | 13,359 | 13,359 |
| 1999 | Average | 16,551 | 16,551 | 4,310 | 4,310 | 5,197 | 5,197 | - | - |
| 2000 | Average | | 9,644 | 18,427 | 18,427 | 1,604 | 1,604 | 2,723 | 2,723 |
| 2001 | Dry | 48,552 | 48,552 | 59,162 | 59,162 | 27,086 | 27,086 | 30,354 | 30,354 |
| 2002 | Dry | 53,552 | 53,552 | 54,837 | 54,837 | 36,204 | 36,204 | 39,351 | 39,351 |
| 2003 | Dry | 32,060 | 25,699 | 43,610 | 12,703 | 22,834 | 17,318 | 24,549 | 19,031 |
| 2004 | Dry | 68,408 | 42,649 | 72,176 | 15,334 | 54,538 | 33,620 | 61,151 | 40,394 |
| 2005 | Average | 29,034 | 39,894 | 28,914 | 59,250 | 2,423 | 4,606 | 7,556 | 10,179 |
| 2006 | Average | 13,374 | 13,228 | 25,755 | 23,528 | - | - | 6,157 | 5,911 |
| 2007 | Average | | - | 13,016 | 12,948 | - | - | - | - |
| 2008 | Wet | | - | - | - | - | - | - | - |
| 2009 | Wet | 11,523 | 11,521 | 21,762 | 21,723 | - | - | - | - |
| 2010 | Average | 22,608 | 22,611 | 27,324 | 27,328 | 5,376 | 5,374 | 9,823 | 9,821 |
| 2011 | Wet | | - | - | - | - | - | - | - |
| 2012 | Dry | 55,080 | 55,083 | 86,143 | 86,294 | 41,184 | 41,183 | 69,580 | 69,580 |
| 2013 | Dry | 20,429 | 5,926 | 22,192 | - | 5,419 | - | 7,213 | - |

**Yield is defined here as being necessarily greater than zero, because Shoshone’s call does not directly result in reductions in flow. Differences in reservoir operations between scenarios can cause reductions in flow greater in magnitude than Shoshone’s actual yield, resulting in zero apparent yield.*

Appendix B – Monthly Yield Analysis

This appendix provides a more detailed review of simulated monthly increases (yields) to the 15-Mile Reach than is provided in the main body of the report. Whereas the main body of the report contains results across all scenarios showing the annual yields, this appendix focuses on the Max-Relaxation scenarios¹³ under both current and future demand levels. The Max-Relaxation scenarios have distributions of monthly yields similar to the other scenarios in most years but exhibit reductions in overall yield to the 15-Mile Reach during Call Relaxation periods when compared to the Max-Relaxation scenarios, which do not include the 2007 Agreement. This appendix reviews the simulated patterns of monthly yields under the Max-Relaxation scenarios, followed by an illustration of the amount of 15-Mile Reach flows attributable to the Shoshone Call. As additional background information, Appendix C provides an overview of the operational mechanisms at Cameo (OMID Power Canal, Check Structure, and GVC operations) together with a more detailed explanation of how the exercise of the Shoshone water rights can increase flows in the 15-Mile Reach even when a Cameo Call is active.

Simulated Patterns of Monthly Yield – Magnitude and Frequency

Magnitude

The patterns of monthly yield to the 15-Mile Reach due to utilization of the Shoshone call are similar for both Current and Future demand levels. Figure 3 depicts the average amount of additional daily flow by month when full utilization of the Shoshone Call yields additional water to the 15-Mile Reach. Regardless of which demand set is used in the Max-Relaxation scenario, the pattern of monthly yields is similar, with the highest yields occurring in early spring – particularly April - and in the late summer months of August – October.

Additional flows in the 15-Mile Reach in months outside the irrigation season, such as in February and March, tend to result from changes in reservoir storage carryover from previous years, together with differing administrative regimes that can limit the amount of storable water¹⁴. The yields in those months typically result from reservoirs having to

¹³ The Max-Relaxation scenario assumes full use of the Shoshone water rights (1,408 cfs call) and implementation of a Call Relaxation under the 2007 Agreement, which is simulated to occur in this analysis in 2003, 2004, and 2013)

¹⁴ These changes may be due to both increased releases to offset other depletions and decreased ability to store water in priority. This phenomenon is seen in many years and is particularly evident in dry years, such as in 2001. In February and March of 2001, in both the Current and Future scenarios, Williams Fork Reservoir gains storage each month if the Shoshone Call is not active and loses storage each month if the Shoshone Call is active. The increase in flow at the 15-Mile Reach due to the different administrative regime at Williams Fork Reservoir in February and March with the Shoshone call on is about 88 cfs in 2001. However, the difference in river administration with and without the Shoshone Call does not impact

bypass inflows that – absent a Shoshone call – would be storable under their more junior storage rights. The pronounced increase in April is due to both changes in the ability of upstream reservoirs to fill, coupled with early-season irrigators either being curtailed or required to release additional augmentation water from storage.

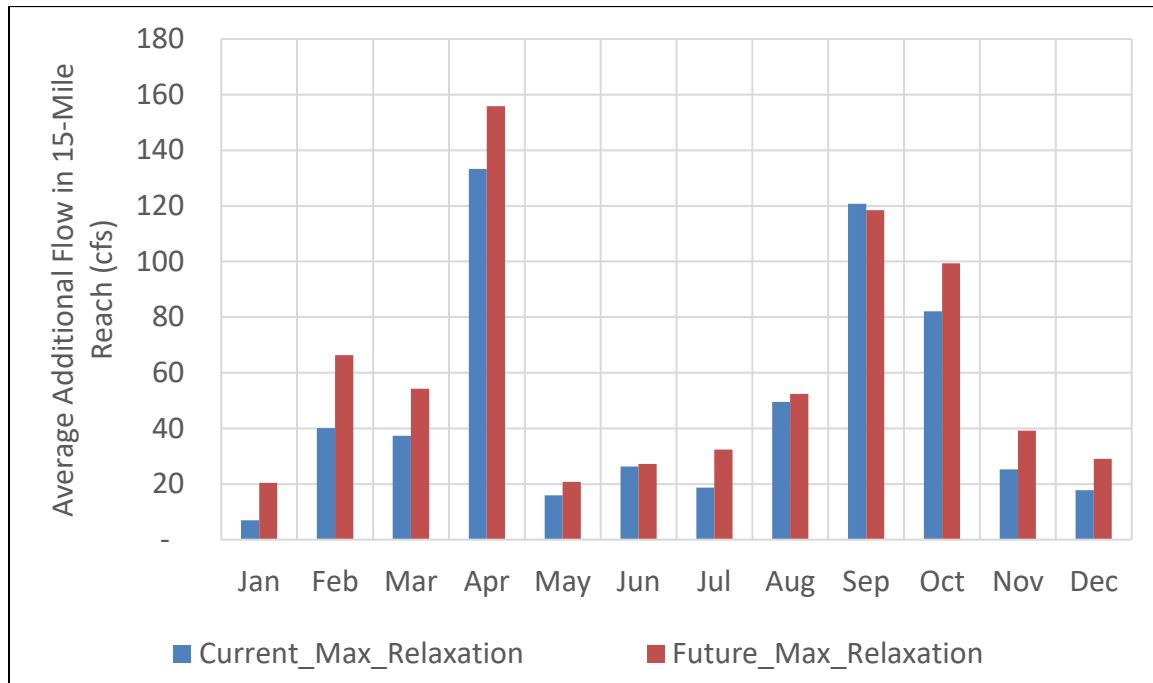


Figure 3. 1988-2013 Average Monthly Yield Magnitude Patterns - Current and Future Max Relaxation Scenarios

Frequency

In addition to increased flows during spring and late summer, the *frequency* of increased flows is also highest in these months. Table 10 illustrates expected frequency (likelihood) by month of increased 15-Mile Reach flows with the Shoshone Call active. The frequency shown is percentage of years over the 1988-2013 study period in which a given month saw increased flows.

Williams Fork Reservoir every year. Similarly, changes in storage at other reservoirs may exhibit different behavior in any given year due to the complexities of each reservoir’s operational response to the presence or absence of a Shoshone Call, and this impact may persist over multiple years.

Table 10. Monthly Yield Frequency - Current and Future Max Relaxation Scenarios

| | <i>Jan</i> | <i>Feb</i> | <i>Mar</i> | <i>Apr</i> | <i>May</i> | <i>Jun</i> | <i>Jul</i> | <i>Aug</i> | <i>Sep</i> | <i>Oct</i> | <i>Nov</i> | <i>Dec</i> |
|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <i>Current</i> | 27% | 73% | 69% | 69% | 12% | 12% | 15% | 46% | 88% | 77% | 46% | 35% |
| <i>Future</i> | 46% | 92% | 73% | 77% | 19% | 12% | 23% | 54% | 81% | 85% | 54% | 54% |

The monthly pattern of yield *frequency* is similar to the monthly pattern of yield *magnitude*, with the exception of the winter months (December through March). The four winter months show higher frequency of yield but a lower magnitude of yield, due to reduced natural flows in the winter and the lack of any substantial irrigation demands, including the Cameo Call, during this period.

PBO Comparison

Differences between these scenarios can also be evaluated against flow recommendations from the Upper Colorado River PBO.¹⁵ Table 2 of the PBO is repeated here for reference:

¹⁵ <https://coloradoriverrecovery.org/uc/wp-content/uploads/sites/2/2021/09/FinalPBO.pdf>

Table 11. (Table 2 from Upper Colorado River Programmatic Biologic Opinion)

Table 2. Recommended mean monthly flows for the top of the 15-Mile Reach in cubic feet per second. Rate is the percent of years recommended for identified flows based on winter snowpack levels. For example, in the wettest 25 percent of years, flows in June should average at least 15,660 cfs; stated another way, this recommendation should be met in 5 of every 20 years. During low-water years, June flows should average no less than 6,850 cfs, and such a minimum should occur at a rate of no more than 4 in 20 years (20 percent). Table from Osmundson et al. 1995.

| Rate | 25 percent | 25 percent | 30 percent | 20 percent |
|------------|------------|------------|------------|-------------|
| Exceedance | 25 percent | 50 percent | 80 percent | 100 percent |
| JAN | 1,630 | 1,630 | 1,630 | 1,240 |
| FEB | 1,630 | 1,630 | 1,630 | 1,240 |
| MAR | 1,630 | 1,630 | 1,630 | 1,240 |
| APR | 3,210 | 2,440 | 2,260 | 1,860 |
| MAY | 10,720 | 9,380 | 7,710 | 7,260 |
| JUN | 15,660 | 14,250 | 11,350 | 6,850 |
| JUL | 7,060 | 5,370 | 3,150 | 1,480 |
| AUG | 1,630 | 1,630 | 1,240 | 810 |
| SEP | 1,630 | 1,630 | 1,240 | 810 |
| OCT | 1,630 | 1,630 | 1,240 | 810 |
| NOV | 1,630 | 1,630 | 1,630 | 1,240 |
| DEC | 1,630 | 1,630 | 1,630 | 1,240 |

As noted in the inset table caption, PBO recommendations for very low-flow years are listed in cfs in the far right column by month. From a fisheries-benefit perspective, those low-flow targets ideally would have an 80% exceedance (i.e., only 4 years out of 20 would see flows corresponding to the right-most monthly targets). Figure 4 and Figure 5 compare the frequency of meeting the recommended flow targets for the months of April and September across the scenarios.

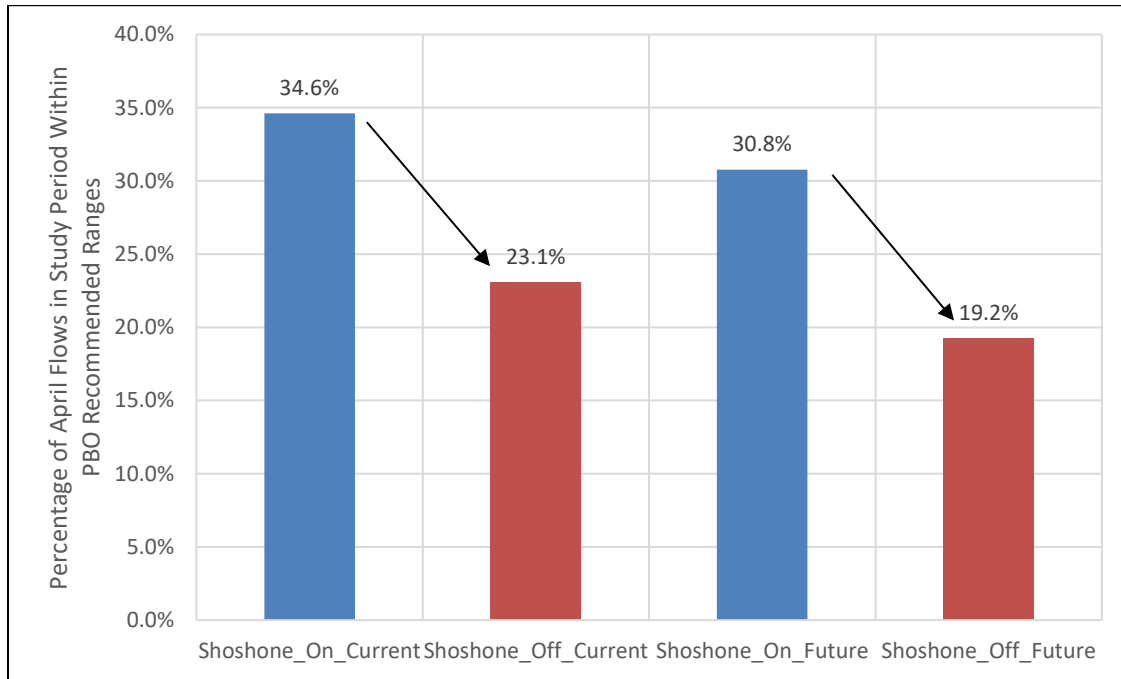


Figure 4. Frequency of April Flows meeting the Lowest PBO Recommended Range (Shoshone On Scenario is Max w/ Relaxation).

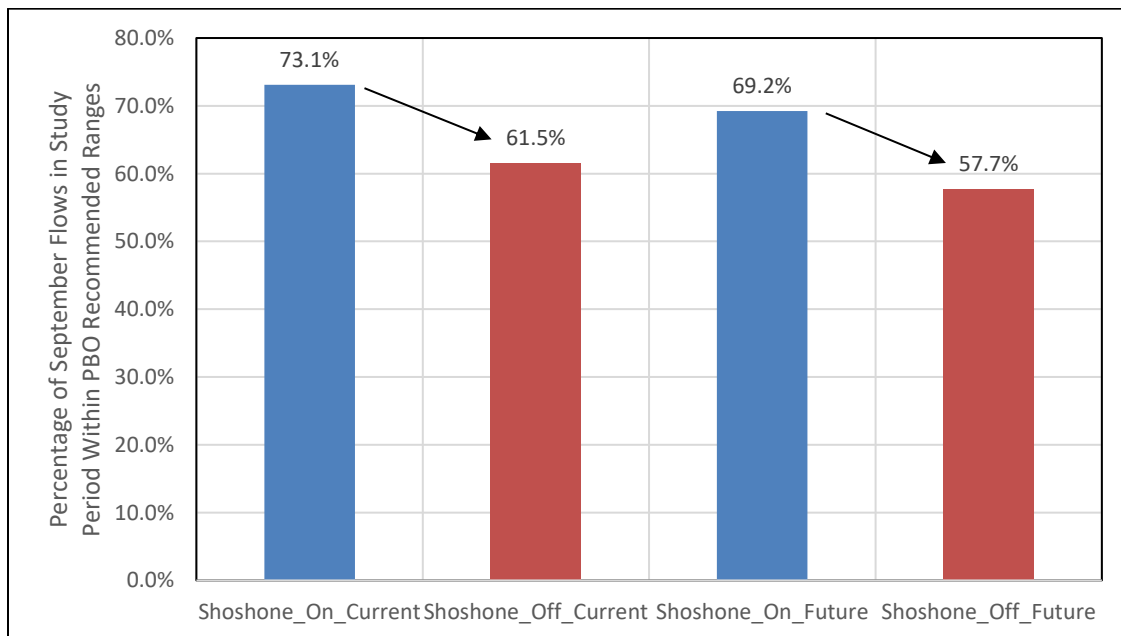


Figure 5. Frequency of September Flows meeting the Lowest PBO Recommended Range (Shoshone On Scenario is Max w/ Relaxation).

Notably, there is a significant *decrease* in the frequency of meeting the PBO recommendations when the Shoshone Call is *off*. While having the Shoshone Call active does not by itself meet all desired flow targets for the 15-Mile Reach, its absence would result in significant reductions in PBO target flow compliance rates.

Summary of Late-Summer Benefits

The increase in flows in August-October are of particular interest, because generally lower natural flow conditions—combined with upstream diversions that are often being fully utilized during late summer—tend to negatively impact flows, and hence endangered species, in the 15-Mile Reach. Despite having the lowest monthly flow target (810 cfs), flows in August-October meet that target just 72% of the time during the simulation period. The contribution of the Shoshone Call to flows in the 15-Mile Reach is significant, particularly in critically dry periods.

Model results indicate that when average flows in the 15-Mile reach are less than 810 cfs, the Shoshone Call is responsible for 22% (on average) of that flow, and in some months as much as 50% of the flow (Figure 6).

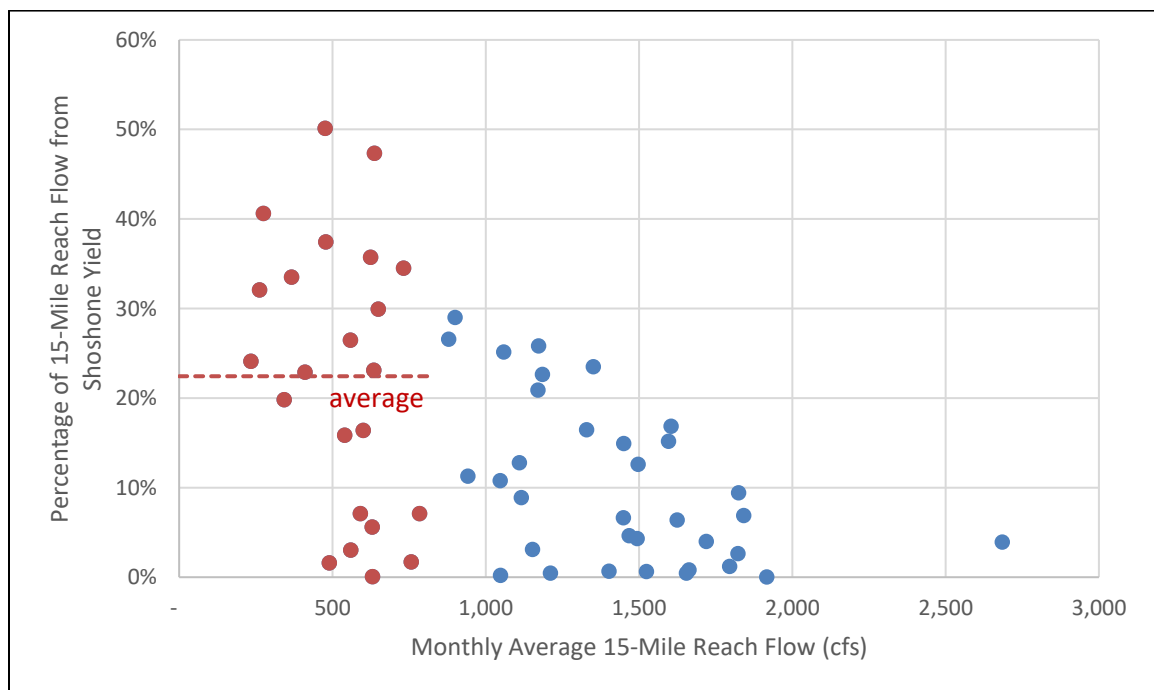


Figure 6. Relationship Between Monthly Average Flow and the Percentage of Flow Resulting from Shoshone's Call - Aug-Oct, Future Max Relaxation Scenarios.

Summary of Monthly Yield Analysis

The analysis presented in Appendix B illustrates several key benefits of the Shoshone Call to the 15-Mile Reach, including:

1. Increases in monthly flows through the 15-Mile Reach year-round, with the highest flow increases in early spring (February – April) and late summer (August – October).
2. The *frequency* of increased flows is also generally highest during the early spring and late summer months. Approximately 4 out of 5 years see some amount of increased flows in September and October (Table 10).
3. The benefits accruing to the 15-Mile Reach are particularly significant during the months with the lowest flows in the driest years. The likelihood of meeting the PBO recommended flow minimums increases across all scenarios when the Shoshone Call is on (Figures 4 and 5).
4. During critically dry (<810 cfs) months, the Shoshone Call contributes *on average* 22% of the flow in the 15-Mile Reach, and as much as 50% of the flow.

Appendix C: Dissecting the Cameo Calls – How Shoshone Contributes to the 15-Mile Reach in Late-Summer

This appendix is being provided in response to comments received during review of this report and associated presentations. The appendix provides additional details as to the mechanisms that result in additional flows to the 15-Mile Reach during months in which a Cameo Call may typically be active. The Cameo Call is a generic term that describes an administrative call for water placed by either the Grand Valley Project’s Government Highline Canal or the Grand Valley Canal, both of which are directly upstream of the 15-Mile Reach and both of which have relatively senior water rights in the basin (although the most senior Cameo water rights are junior to Shoshone’s senior water right). StateMod results indicate that having Shoshone active has a meaningful impact to the 15-Mile Reach. However, StateMod is somewhat limited in its ability to tease out details of how the Shoshone and Cameo calls interact, particularly over sub-monthly time periods. Examination of historical river administration records can be used to validate these conclusions.

Mechanisms that benefit 15-Mile Reach flows include:

1. Delayed Onset of the Cameo Call: A Shoshone Call brings additional water downstream, which delays and shortens the duration of the Cameo Call. This additional flow is the result of increased curtailment and/or release of larger volumes of augmentation water by junior users upstream of Shoshone.
2. Reduced Need for Recovery Program Flow Releases: A Shoshone Call reduces the need for Recovery Program supplemental releases by increasing flows past Cameo into the 15-Mile Reach. This reduces the need for releases from “fish water”¹⁶ storage accounts during certain times and allows for increased flexibility in providing flow augmentation releases during late summer months.
3. Operation of the OMID Check Dam during a Cameo Call: Efficient operation of the OMID Power Plant and Pump Turbine often results in only partial operation of the Check Dam. This enables more efficient power production and results in water bypassing the Check Dam and returning to the river at the head of the 15-Mile Reach.

Each of these is discussed in more detail below.

1. Delayed Onset of Cameo Call

Historically, the Cameo Call is the controlling call on the river during the late summer months of August through October. In the absence of a Shoshone Call, it is likely that the

¹⁶ “Fish Water” refers to releases from upstream reservoirs make specifically to benefit flows in the 15-Mile Reach. These releases are shepherded past the Cameo diverters for the benefit of the Endangered Fish.

Cameo Call would be initiated even earlier in the year, as the runoff peak ends and the river returns to a baseflow condition. Under an assumed full utilization of the Shoshone Call, the need for a Cameo Call is pushed later in the summer and may be eliminated altogether.

An example of the effect that the Shoshone Call has in delaying the Cameo Call can be seen in CDSS administrative data from August and September of 2019. The Shoshone junior call was first placed on 8/23/2019. The senior Shoshone call was then placed on 8/28/2019 with the swing right at CBT's 8/1/1935 priority. As Administrative Flows¹⁷ continued to fall, the swing right was adjusted to the Moffat Tunnel (7/9/1934) priority on 8/30, and finally to the Shoshone Priority (12/5/1905) on 9/2/2019. Although Shoshone was calling throughout September, the gradual reduction of mainstem and tributary inflows pushed the natural flow of the river low enough that by 9/25/2019, a Cameo Call was necessary at the 8/3/1934 priority of the Grand Valley Project.

In analyzing this historical sequence of calls, it is reasonable to conclude that absent the Shoshone Call, a Cameo Call would have been placed much earlier in September. In this example, the Shoshone Call likely delayed the onset of the Cameo Call by 3 or 4 weeks. Regardless of how much Administrative Flow was in the river over and above the Cameo diverters' demands, the lack of a Cameo Call during this period indicates that the Shoshone Call resulted in water in excess of the Cameo diverters' needs passing into the 15-Mile Reach. Absent the Shoshone Call, it is likely that the Cameo Call would have started weeks earlier and there would have been less water in the 15-Mile Reach. Delaying the onset of the Cameo Call by making the Shoshone Call permanent will result in additional flows into the 15-Mile Reach.

Sources of Water

The Senior Shoshone Call is administered under a 1905 priority and is approximately seven years senior to the senior Cameo Call, which is administered at a 1912 priority. Differences in the administrative dates and volume of the two calls impacts water users upstream of Shoshone. In general, the more senior Shoshone Call will force junior rights upstream to either provide additional augmentation water or curtail their uses.

To the extent that there was a swing call on one of the junior rights above Shoshone, exercising the Shoshone call over the Cameo call would increase that user's required offset, or would shift the swing to another user. Regardless, delaying or preventing a Cameo Call through continued utilization of the Shoshone rights will result in longer periods of flows

¹⁷ In general terms, the "Administrative Flow" equals the measured flow at the Dotsero Gage minus shepherded reservoir release water, including "fish water" that has been bypassed or released from upstream storage and is shepherded past other diversions in order to supplement flows in the 15-Mile Reach

at Cameo in excess of diversion demands, and result in more water being bypassed into the 15-Mile Reach.

2. Enhanced Flexibility of Recovery Program Releases

As previously discussed in the main body of this report, modeling results indicate a reduction in flows in the 15-Mile Reach during late summer months without Shoshone actively calling. However, when the Shoshone Call is active, average 15-Mile Reach flows increase, particularly during critically dry months and years.¹⁸ StateMod currently does not simulate changes to “fish water” releases that might result from changes to Shoshone operations. However, it is clear that having additional flows in the 15-Mile Reach by virtue of the Shoshone Call increases the likelihood of meeting PBO flow targets (See Figures 4 and 5) and will allow for greater flexibility in utilizing the various environmental pools to make releases to benefit the endangered fish populations in that reach.

3. Operation of OMID Check Dam during a Cameo Call

The existence of a Shoshone call does not guarantee that there will not be a Cameo call, although it does reduce the likelihood and delay the onset. During periods when both Cameo and Shoshone are calling, there can still be benefits to the 15-Mile Reach as compared to river conditions without a Shoshone Call.

Figure 7 presents a simplified schematic of the diversion infrastructure at Cameo that is useful in understanding how water moves through that system.¹⁹ The Orchard Mesa Irrigation District (OMID) diverts part of the flow of the Government Highline Canal into the OMID Power Canal. Tailwater from the OMID power plant and pump turbine are regulated by a Check Dam which can be operated to deliver water upstream through the bypass channel for diversion by the GVIC into the Grand Valley Canal. If the Check Dam is only partially closed, the portion of water not delivered back to GVIC is returned to the river just below the GVIC canal, at the head of the 15-Mile Reach.

OMID operates the Check Dam when flows available to meet the Cameo Call are at or below 1,950 cfs, thereby enabling power generation and deliveries to OMID without injuring the senior GVIC rights (see Figure 7). However, checking flows into the bypass channel at a rate greater than 100 cfs results in decreased power production due to a reduction in hydraulic head caused by pooling of the power and pumping plant tailwater. Thus, the Check Dam does not always redirect all the OMID Power Canal return flow water upstream to the GVIC diversion dam. Often, the Check operates only partially or not

¹⁸ See Figures 3-5.

¹⁹ This schematic is taken from a report by Paul Calder dated July 12, 1993 entitled "Orchard Mesa Irrigation District Operation of the 'Check'".

at all – even when a Cameo Call is in effect. Water not checked back into the bypass channel accrues to the 15-Mile Reach.

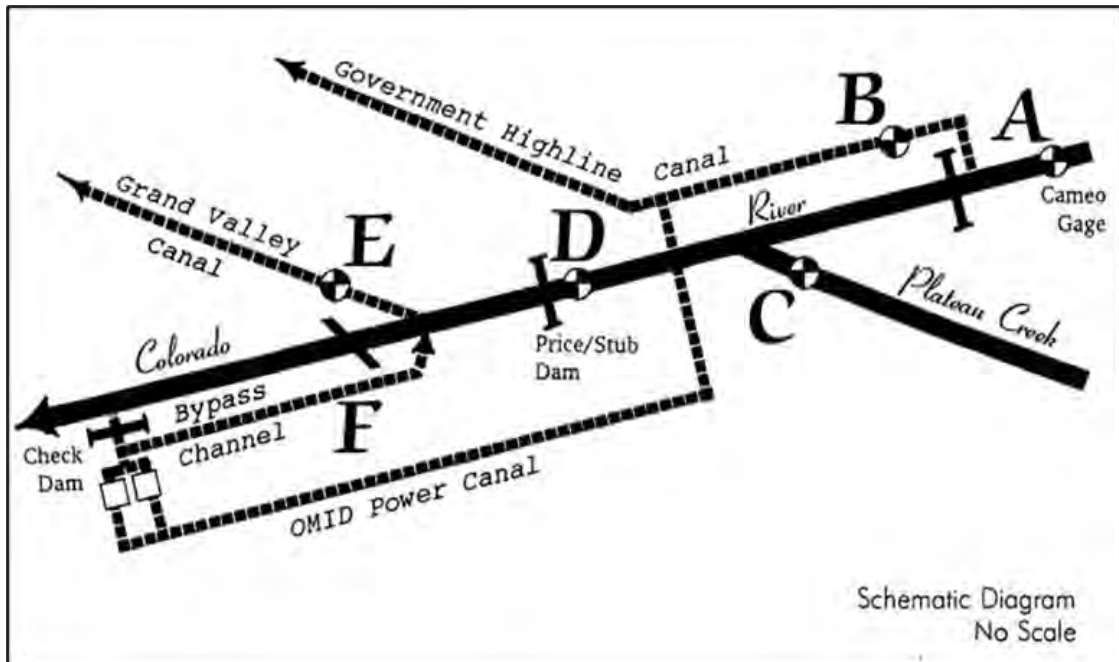


Figure 7. Schematic Diagram of Cameo Diversions.

Historical Example

Historical flows in the 15-Mile Reach were evaluated during periods when Shoshone was calling. The full set of data required for this assessment is available beginning in 2012, which was a year where infrastructure issues prevented full exercise of the Shoshone water rights. Figure 8 shows the period from July-October of that year when the senior Cameo Call was active, and how the Check Dam and the OMID power plant were operated in tandem during that time. In the figure, the “check structure” line represents flows delivered back to the river via the bypass channel to ensure GVIC’s demand is met. The difference in flow between the two lines represents—at a minimum—the amount of water entering the 15-Mile Reach. If GVIC is not diverting 100% of the flow at its headgate, additional water will arrive at the 15-Mile Reach as it passes the GVIC diversion dam.

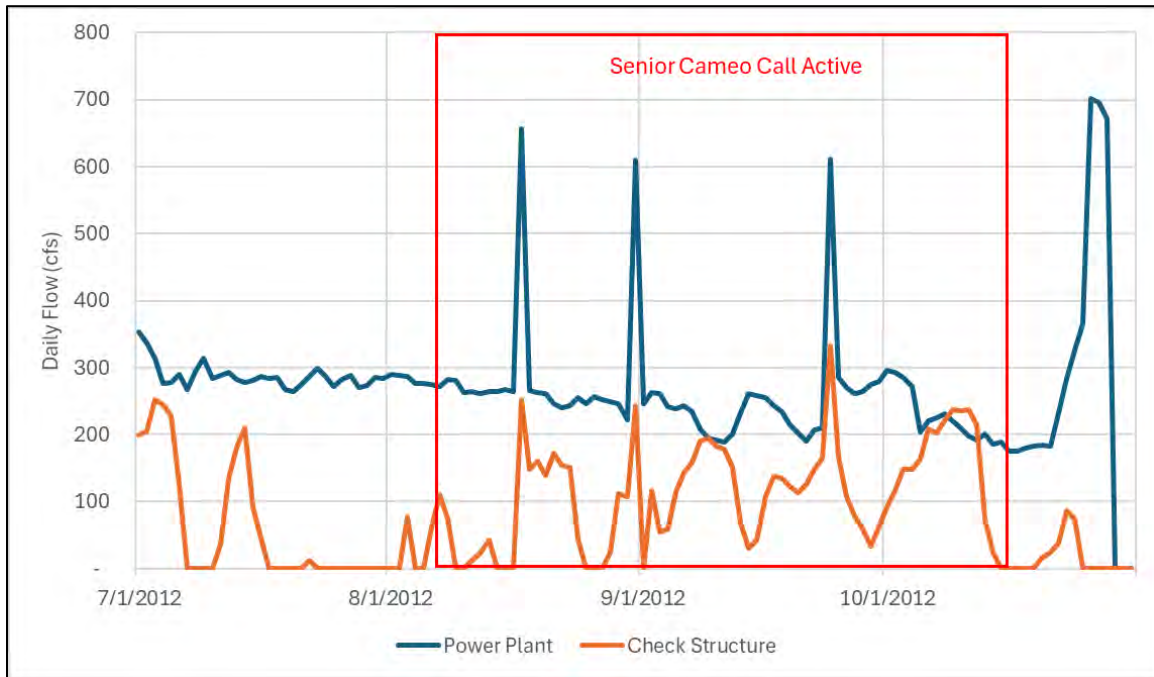


Figure 8. Historical Observed Power Plant Diversions and Checked Flow, 2012.

A portion of the difference in flow between the lines showing the OMID power plant and Check Dam usage corresponds to “Fish Water” that was released from upstream storage and is intended to supplement flow in the 15-Mile Reach. These deliveries are NOT subject to a Cameo Call, are often routed through the OMID power plant, would not be checked back into the bypass channel, and would be released into the river at the head of the 15-Mile Reach. Not all of the water represented by the difference between the two lines is “Fish Water”. Periods during which this additional flow accrues to the river below GVIC represent instances where calls from the Cameo water rights have been met, and any additional flows from upstream would accrue to the 15-Mile Reach. Had the senior Shoshone Call been in place during these times, there are upstream diversions junior to Shoshone but senior to Cameo that would have been called out, and the additional yield from their curtailment (or associated replacement water released from storage) would have accrued to the 15-Mile Reach.

DRAFT

TO: Colorado River District Staff and Counsel
FROM: Hydros Consulting, Inc.
SUBJECT: Addendum to September 11, 2024, Shoshone Power Plant Water Rights Yield Assessment
DATE: November 7, 2024

This memo is being provided as an addendum (Addendum) to the September 11, 2024 memo “Shoshone Power Plant Water Rights Yield Assessment” from Hydros Consulting to the River District. On September 18, 2024, a new version of the Upper Colorado River Basin Model (UCRM) and Baseline Data Set was released to the public by the Colorado Water Conservation Board (CWCB). The updated version of the UCRM can be run using either monthly or daily timesteps. A summary of the significant changes made to the 2015 version of the UCRM is provided in a memo from the State’s modeling contractor (herein “WWG Memo”) from Erin Wilson (Wilson Water Group) to Brian Macpherson (CWCB) dated September 16, 2024.¹

This Addendum provides a summary of additional analyses conducted using the daily timestep version of the new UCRM and addresses comments raised by organizations reviewing the original analysis. Like the original September 11, 2024, memo, the analysis presented in this Addendum is not intended to quantify the historical use of the Shoshone water rights.

Background

The daily timestep model provides an opportunity to more precisely analyze the effects of the proposed Shoshone water rights on stream flow and revisit the analysis of the impacts to Colorado River flow if the Shoshone water rights were eventually abandoned or otherwise not exercised. However, because the daily UCRM has yet to undergo any formal vetting process, the daily UCRM outputs are likely less accurate than what would occur under real-time conditions.²

¹ https://dnrftp.state.co.us/CDSS/ModelFiles/StateMod/Shoshone_StateMod_Baseline_9-26-2024.zip

² Note that this daily model was not calibrated to daily or monthly flows or operational data, and only generally approximates actual patterns of daily water user demands. It also does not reflect the reality of multi-day travel times when making reservoir releases or administering water rights. As such, the daily UCRM will tend to allocate water more precisely, but possibly less accurately, than would occur in reality.

For purposes of this Addendum, three different Shoshone water rights³ operation scenarios were evaluated:

1. The “Baseline” model as provided by CWCB, representing the current conditions in the basin;
2. A “Zero Shoshone” scenario, which simply sets the Shoshone demand to zero; and
3. A “Max Shoshone” scenario, which assumes a Shoshone demand of 1,408 cubic feet per second (cfs) year-round, subject to reduction as discussed below.

In both the Baseline and Max Shoshone scenarios, the years 2003 and 2013 are simulated using the Public Service Company/Denver Water Relaxation Agreement demands for the Shoshone water rights. Thus, the “Max Shoshone” scenario is comparable to the “Max with Relaxation” scenarios from the September 11, 2024, Hydros memo. These three Shoshone scenarios are combined with two sets of basin-wide user demands, representing “Current Conditions” (i.e., users other than Shoshone unadjusted from the “Baseline”), and “Future Conditions,” which approximate the increment of consumptive use allowed under the 15-Mile Reach Programmatic Biological Opinion (PBO).⁴

Impacts to Reclamation Projects and Associated Water Deliveries

Following release of the September 11, 2024, Hydros report which utilized the 2015 monthly UCRM, some water users expressed a desire for additional analyses of potential impacts, if any, the proposed “Shoshone Permanency” approach would have on Reclamation’s project operations, including reservoir storage and water deliveries.

As stated in the WWG Memo, the Baseline model represents current demands, infrastructure, and administration, and “*can be used as the basis against which to compare a simulation that includes a new use or operation.*” (WWG Memo, page 1). Given this intended use, and to address the questions raised with respect to impacts on other users, the Baseline model results were compared to a simulation of basin conditions under a “Max Shoshone” scenario in which a year-round demand of 1,408 cfs was assumed for the Shoshone Power Plant.

³ Unless otherwise noted, the use of “Shoshone” when referring to operational scenarios and model results generally refers to the demands placed by, and exercise of, the Shoshone water rights.

⁴ The PBO allows for 120,000 acre-feet of additional depletions in the Colorado River above its confluence with the Gunnison River. The updated UCRM Baseline demands are approximately 50,000 acre-feet more than the 2015 UCRM Baseline demand data. Thus, the Future Conditions demand dataset used in this Addendum targets an additional 70,000 acre-feet of demands. The depletions resulting from these demands increase by approximately 105,000 acre-feet on average due to shortages in some years.

In the Baseline scenario, Shoshone’s water rights demands vary between 704 cfs and 1,408 cfs depending on the season, assumptions about outages at the Shoshone Power Plant, and implementation of call relaxation in 2003 and 2013. In order to assess the possibility that the impact of the Shoshone Call⁵ might change in the future as basin-wide development increases, the daily UCRM under Baseline and Max Shoshone scenarios is simulated under both Current Conditions and Future Conditions for basin-wide demands. Since the objective of this analysis is to understand more about the impact and importance of the Shoshone Call, and not to assess the impacts of other development in the basin, comparisons here focus on differences between Baseline and Max Shoshone scenarios (as opposed to comparing the Max Shoshone scenario under Current and Future demand conditions).

Colorado – Big Thompson Project (C-BT) and Frying Pan – Arkansas (Fry-Ark) Storage
The Baseline and Max Shoshone scenarios produce almost identical results for storage in Granby Reservoir, Green Mountain Reservoir, and Ruedi Reservoir when minimum, average, or maximum storages are compared at a given level of basin-wide development. Table 1 presents a comparison of storage in units of thousands of acre-feet (KAF), where the largest difference resulting from Shoshone Max versus Baseline is the 0.1 KAF difference in average storage for Granby Reservoir. For reference, results for the “Zero Shoshone” scenarios are also presented in Table 1.

Table 1. C-BT and Fry-Ark Storage Comparison (units of KAF)

| Scenario | | Granby | | | Green Mountain | | | Ruedi | | |
|--------------------|----------|--------|-------|-------|----------------|-------|-------|-------|------|-------|
| | | Min | Avg | Max | Min | Avg | Max | Min | Avg | Max |
| Current Conditions | Baseline | 74.4 | 332.8 | 539.7 | 48.6 | 95.9 | 154.6 | 52.0 | 83.6 | 102.4 |
| | Max | 74.4 | 332.8 | 539.7 | 48.6 | 95.9 | 154.6 | 52.0 | 83.6 | 102.4 |
| | Zero | 76.1 | 337.3 | 539.7 | 57.9 | 100.3 | 154.6 | 52.0 | 83.2 | 102.4 |
| Future Conditions | Baseline | 74.3 | 279.2 | 539.7 | 48.5 | 93.4 | 154.6 | 52.0 | 83.6 | 102.4 |
| | Max | 74.3 | 279.1 | 539.7 | 48.5 | 93.4 | 154.6 | 52.0 | 83.6 | 102.4 |
| | Zero | 73.6 | 282.4 | 539.7 | 57.6 | 97.4 | 154.6 | 52.0 | 83.1 | 102.4 |

There is no appreciable difference in simulated storages between the Baseline and Max Shoshone scenarios. There are differences, however, between those two scenarios and the Zero Shoshone scenario, which exhibits higher average storage levels for reservoirs upstream of the Shoshone Power Plant (Granby and Green Mountain Reservoirs), The

⁵ For purposes of this Addendum and the September 11, 2024, memo, the “Shoshone Call” means the historical administration of the 1,408 cfs attributable to the junior and senior priorities under the Shoshone water rights.

decrease in average storage at Ruedi Reservoir without the Shoshone Call occurs because administration of the Shoshone Call tends to prevent calls from Grand Valley water users that would impact Ruedi Reservoir. The differences in minimum and average storage levels in Granby Reservoir and Green Mountain Reservoir are due to changes in the timing of drawdown and refill of those facilities under the different scenarios.

Reclamation and Other Major Trans-Mountain Diversions (TMDs)

C-BT (Adams Tunnel) and Fry-Ark Project (Boustead Tunnel) deliveries to the East Slope are largely unaffected by Shoshone's operations, when Baseline and Max Shoshone scenarios are compared to each other, similar to the impacts noted for project storage. There are also significant amounts of Colorado River water diverted for municipal and other uses for Front Range communities through the Homestake, Twin Lakes, Roberts, and Moffat Tunnels. None of these uses experience any appreciable reduction in their supplies between the Baseline and Max Shoshone scenarios as illustrated in Table 2:

Table 2. Major Trans-Mountain Diversions Average Annual Diversions (units of KAF)

| Scenario | | Adams Tunnel | Boustead Tunnel | Homestake Tunnel | Twin Lakes Tunnel | Moffat Tunnel | Roberts Tunnel |
|--------------------|----------|--------------|-----------------|------------------|-------------------|---------------|----------------|
| Current Conditions | Baseline | 242.4 | 48.0 | 26.3 | 40.8 | 53.2 | 75.5 |
| | Max | 242.4 | 48.0 | 26.3 | 40.8 | 53.2 | 75.5 |
| | Zero | 242.7 | 47.8 | 26.7 | 40.7 | 53.5 | 75.5 |
| Future Conditions | Baseline | 254.4 | 48.0 | 28.7 | 40.8 | 60.2 | 96.6 |
| | Max | 254.4 | 48.0 | 28.7 | 40.8 | 60.2 | 96.6 |
| | Zero | 255.3 | 47.8 | 32.0 | 40.7 | 60.7 | 96.6 |

Grand Valley Project

Reclamation's Grand Valley Project delivers water to the Grand Valley Water Users Association (GVWUA), Orchard Mesa Irrigation District (OMID), and Vinelands Hydropower Plant (Vinelands). Diversions to these water users are unchanged when comparing the Baseline, Max Shoshone, and Zero Shoshone scenarios under both Current and Future Conditions (the maximum difference is 0.02%, less than one acre-foot). The Grand Valley Project water users do not see increased demands under Future Conditions, and their water rights are senior enough not to be impacted by changes to Shoshone operations.

Recovery Program Storage

While the Shoshone demands are different between the Baseline and Max Shoshone scenarios, the outcome of the modeling is nearly identical under these two scenarios. These results are not unexpected, because physical water supply limits water availability for large periods of time when Shoshone is typically calling for water.⁶ In many periods, especially during winter months, regardless of whether Shoshone is calling for 900 cfs, 1,250 cfs, or 1,408 cfs, there is often not enough water to fully satisfy the Shoshone Call.

The UCRM tracks the use of the various user pools in each reservoir, so evaluation of impacts to specific user accounts is possible. One group of reservoir accounts of particular interest in this analysis are the “fish pool” accounts for the Upper Colorado River Recovery Program that store water for subsequent release to benefit threatened and endangered fish in the 15-Mile Reach. To address the possibility that the Max Shoshone scenario might negatively impact the fish pool accounts, combined storage in the fish pool accounts was evaluated and compared to the Baseline scenario. *Figure 1* presents the combined storage in the fish pool accounts in Ruedi, Wolford Mountain, and Granby Reservoirs under Current Conditions demands. Although the time series are not identical for each reservoir, as evident during the lowest drawdowns in some years, the average storage differs by less than 10 acre-feet (less than 0.1%).

⁶ Previous versions of the UCRM utilized average monthly state-recorded *diversions, which are calculated using a constant turbine efficiency at the Shoshone Power Plant*, as the basis for Shoshone water rights’ demands. This assumption underestimated Shoshone water rights’ actual *demand* for water and artificially limited the power plant’s ability to divert water for power production during times when the amount of water available for diversion exceeded the long-term average.

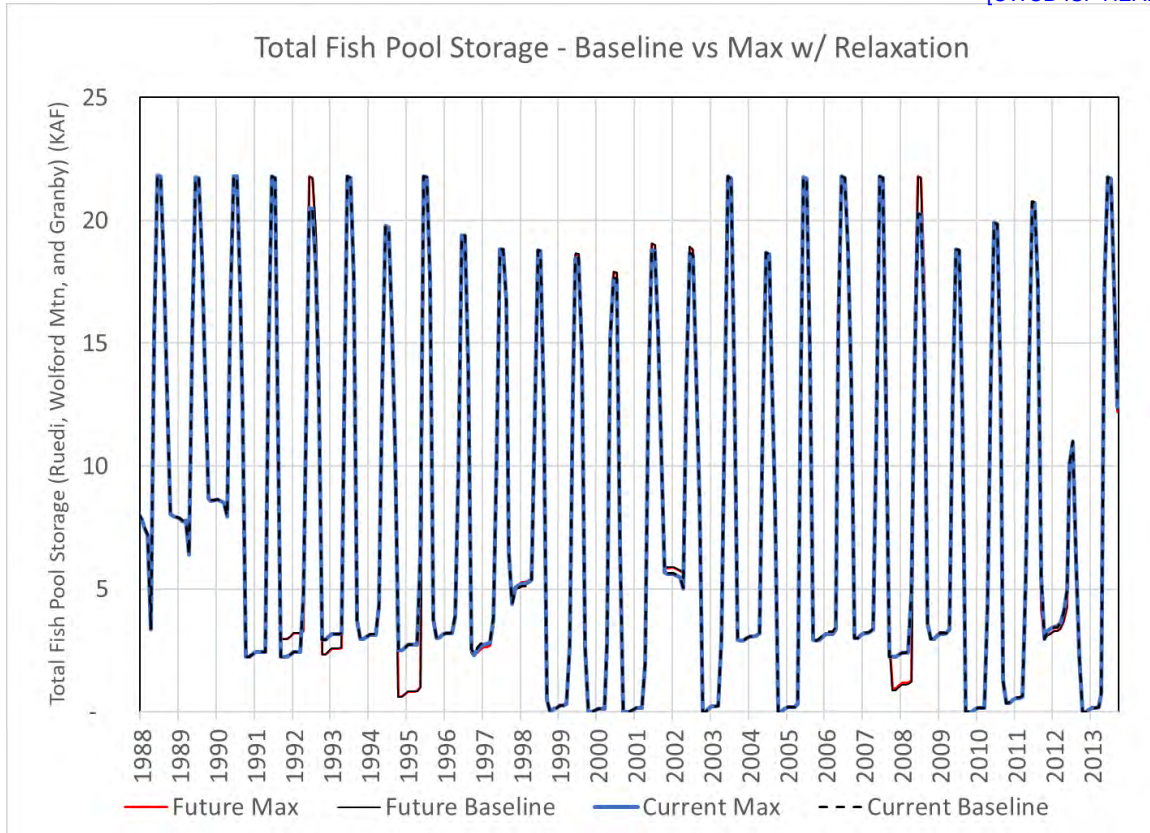


Figure 1. Total Fish Pool Storage - Baseline vs Max w/ Relaxation. The differences in minimum storage are so small as to be difficult to discern on this graph, except for some minimum storage values when Current and Future Conditions are compared.

Benefits to the 15-Mile Reach

Analysis of impacts to the 15-Mile Reach includes simulation of the Max Shoshone and Zero Shoshone scenarios under both Current Conditions and Future Conditions in the daily timestep version of the UCRM.

Summary: Results from this daily modeling analysis confirm the conclusions from the original Hydros yields assessment memo (September 11, 2024) using the monthly UCRM. Shoshone has a significant benefit to flows in the 15-Mile Reach, and the timing of that benefit is well aligned with the objectives of the Endangered Fish Recovery Program. The timing of the Shoshone call and the resulting benefits to the 15-Mile Reach are greatest during dry years, and in all years during the lowest flow months of August – October, when fish flow targets are most difficult to meet.

Based on outputs from the Baseline model, the Shoshone water rights are actively calling 62% - 64% of the time during the 1988-2013 period of simulation, under Current Conditions and Future Conditions, respectively. Absent the continued exercise and

administration of the Shoshone water rights, flows through the 15-Mile Reach would be reduced by an annual average of 24.2 KAF under Current Conditions and 26.9 KAF under Future Conditions.⁷ Importantly, 68% - 76% of that flow reduction would occur during the critical low-flow months of August through October. These results are shown in Table 4,⁸ which presents the expected annual and August-October benefits to the 15-Mile Reach due to Shoshone Permanency under both Current and Future Conditions. The maximum benefit to the 15-Mile reach in a single year is 41.9 KAF under Current Conditions and 56.0 KAF under Future Conditions. Maximum benefits to the 15-Mile Reach during August-October of a single year are 38.7 KAF and 33.8 KAF for Current and Future Conditions, respectively.

Table 4. Summary of Baseline Model Flow Benefit in the 15-Mile Reach attributable to ongoing exercise of the Shoshone water rights.

| Basin-Wide Development | Average Annual Increase (KAF) | Average August-October Increase (KAF) | Increase occurring during August-October (% of Total Annual Increase) |
|---------------------------|-------------------------------|---------------------------------------|---|
| Current Conditions | 24.2 | 18.5 | 76% |
| Future Conditions | 26.9 | 18.2 | 68% |

Table 5 provides a breakdown of the benefits by year type for both Current and Future Conditions scenarios. The Shoshone water rights contribute a higher percentage of the total flow through the 15-Mile Reach during the period extending from August through October in dry years than in wet years, although the total volumes are similar. The average increase in daily flow attributable to continued exercise of the Shoshone water rights for Current and Future Conditions during August – October over the 1988-2013 period is approximately 100 cfs.

⁷ The “available flow” data from the Shoshone node in the daily UCRM is used to identify the days in the simulation period during which Shoshone water rights are actively calling. If there is no “available flow” at that node, it means that the Shoshone water rights are calling out upstream juniors and/or forcing them to provide replacement water for any depletions. All comparative results presented for the 15-Mile Reach are evaluated during periods that Shoshone water rights are calling under the Baseline scenario.

⁸ Results for the August-October summary statistics shown in Table 4 are for the calendar years 1988-2012. Using calendar years instead of water years allows continuity when computing results statistics over the August-October period. The difference in simulated annual average benefit between 1988-2013 water years and 1988-2012 calendar years is less than 1%. The model simulation ends in September 2013 (the end of the 2013 water year), so calendar year 2013 data are incomplete and not included in the annual summary results that include August-October, such as Table 4 and Table 5.

Table 5. Benefit of Shoshone Call on flows through the 15-Mile Reach by year type under the Baseline scenario. Both annual average and August-October average values are shown.

| Hydrologic Condition | Current Conditions | | | Future Conditions | | |
|----------------------|------------------------------|--------------------------------------|---|------------------------------|--------------------------------------|---|
| | Average Annual Benefit (KAF) | Average August-October Benefit (KAF) | Aug-Oct Benefit (% of total flow in those months) | Average Annual Benefit (KAF) | Average August-October Benefit (KAF) | Aug-Oct Benefit (% of total flow in those months) |
| Dry | 33.1 | 14.9 | 15% | 36.8 | 15.0 | 17% |
| Average | 22.6 | 20.0 | 12% | 24.9 | 18.7 | 12% |
| Wet | 18.3 | 19.6 | 7% | 20.9 | 20.4 | 8% |

Delaying the Cameo Call⁹

The September 11, 2024, Hydros memo compared monthly results to historical data from the CWCB’s CDSS website and concluded that the utilization of the Shoshone water rights impacts the “Cameo Call” by delaying the administration of junior rights to satisfy that call. Results from the daily timestep version of the UCRM confirm this finding.

In the Baseline scenario with Current Conditions, the Cameo Call is on for 1,041 days during the 1988-2013 simulation period. In comparison, the Cameo Call is on for 1,340 days in the Zero Shoshone scenario, a 29% increase in calling days over the Baseline scenario. The Future Conditions results also show a 29% increase in calling days, from 1,108 to 1,429, resulting from the removal of the Shoshone call. Minimizing the frequency of the Cameo Call is significant for the 15-Mile Reach. Every day that Cameo is not calling indicates that there is flow in the river in excess of the Cameo diverters’ needs, and that water will flow past those diverters and into the 15-Mile Reach.

Monthly Results

In the September 11, 2024, Hydros memo, Appendix B discusses monthly distributions of yield, and changes in frequency of flows meeting PBO-recommendations. The qualitative results from that analysis are generally unchanged when similar evaluations are carried out with 2024 UCRM results. Figure 2 presents the average increase in flows by month for periods when the Shoshone water rights are actively calling. These results are consistent with the monthly pattern of benefits seen in the 2015 UCRM results, with

⁹ “Cameo Call” is a generic term that describes an administrative call for water placed by either the Grand Valley Project’s Government Highline Canal or the Grand Valley Canal, both of which are directly upstream of the 15-Mile Reach and both of which have relatively senior water rights in the basin (although the most senior Cameo water rights are junior to Shoshone’s senior water right).

the most significant benefits in the early spring and late summer months. While the magnitude of yields in May and June for the 2024 UCRM is larger than the similar results from the 2015 UCRM, the frequency of yields (i.e., number of days of benefits) in those months is lower.

Another important monthly result that is similar to the 2024 UCRM's daily results is the expected reduction in flows during September under the Zero Shoshone scenario that meet PBO-recommendations (a minimum flow of 810 cfs). Figure 3 presents the comparison of days within the recommended flow range in September across Current Conditions and Future Conditions for the Baseline Shoshone scenario versus the Zero Shoshone scenario. There is a greater decrease in flows meeting the 15-Mile Reach PBO targets under the 2024 UCRM compared to the 2015 UCRM, when comparing the Zero Shoshone scenario to the Baseline, which is likely the result of the 2024 UCRM's ability to evaluate flows on a daily basis.

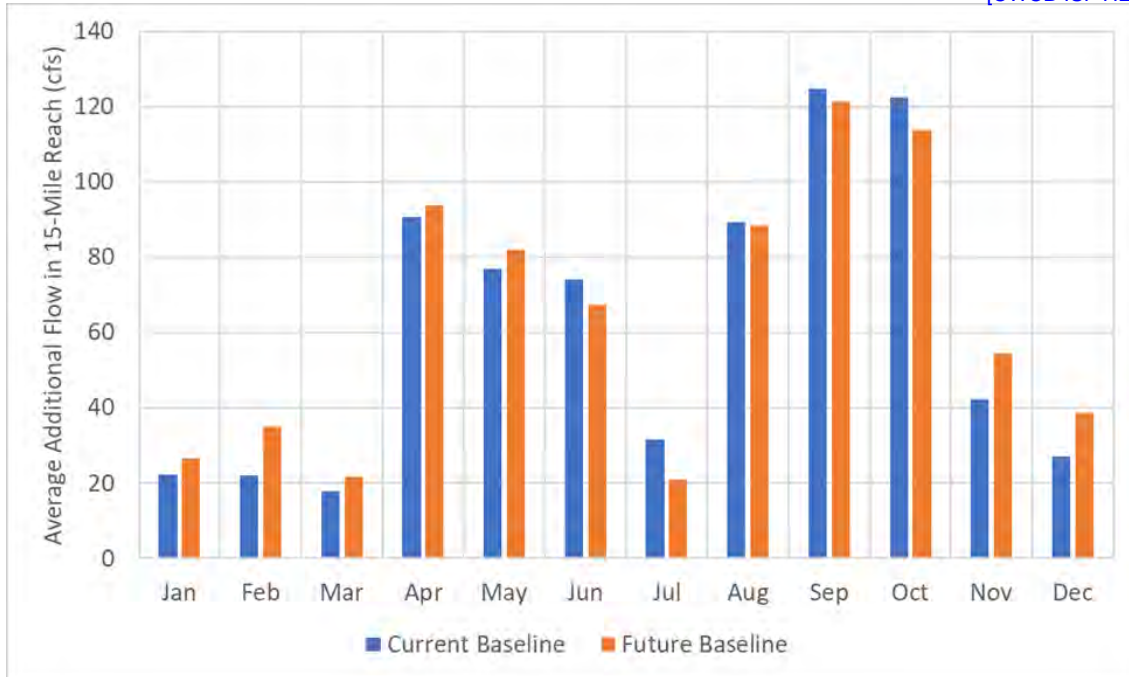


Figure 2. Monthly Distribution of 15Mile Reach Yield - 2024 UCRM

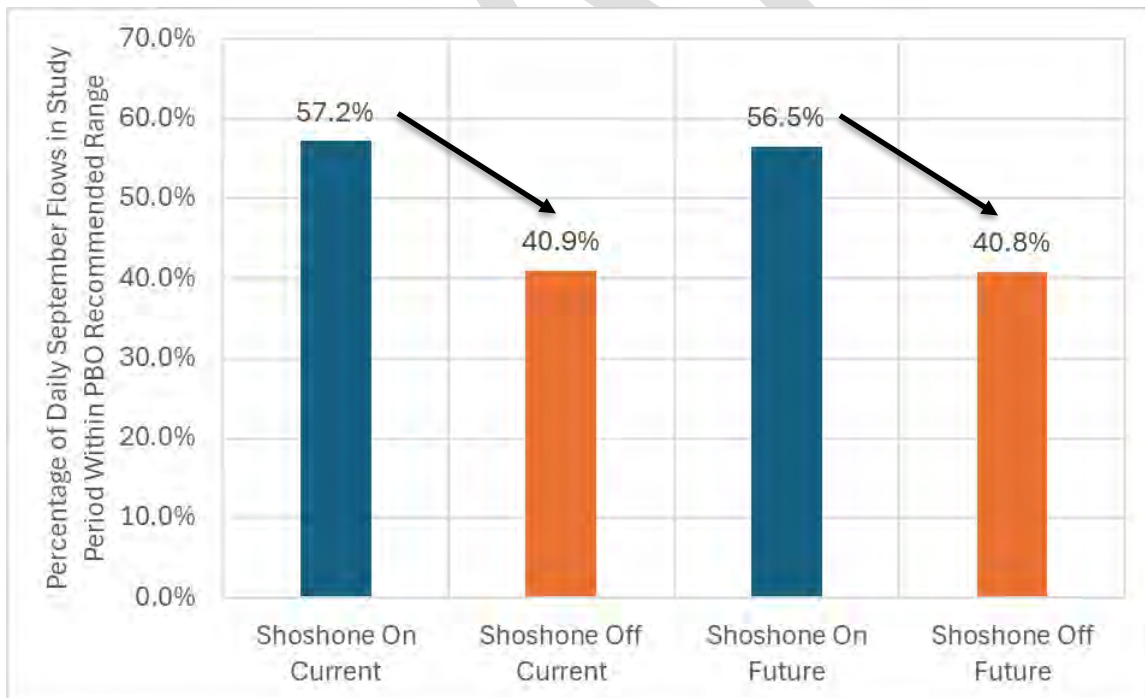


Figure 3. Decrease in Frequency in September Flows within PBO-Recommended Range without Shoshone Permanency

15-Mile Reach Discussion

Benefits to the 15-Mile Reach occur more uniformly across the different year types in the daily UCRM compared to the results from the monthly 2015 version of the UCRM, but still show the greatest benefit during dry (i.e., drought) years.

As expected, and consistent with the results presented in the September 11, 2024, memo, the benefit of Shoshone Permanency to the 15-Mile Reach is magnified when evaluating the Future Conditions scenarios. Results from those scenarios further illustrate the benefit that the Shoshone water rights have in limiting the impact of future growth in consumptive uses on flows through the 15-Mile Reach. As was noted in the original September 11, 2024, Hydros memo, and confirmed again here, the greatest benefit to the 15-Mile Reach, as a percentage of flow attributable to the Shoshone Call, is seen during the driest years and during the low-flow months of August, September, and October.

Conclusions

This Addendum presents analyses using the recently released daily timestep version of the CWCB's 2024 UCRM. This Addendum addresses specific questions raised by interested parties regarding potential impacts to existing projects and to flows in the 15-Mile Reach, which are critical to the success of the Upper Colorado River Endangered Fish Recovery Program. The Addendum also provides a point of comparison between the results presented previously, as shown in Table 5, which presents annual and dry year yields across various versions of the model that have been used to assess yield.

Table 5. Comparison of benefits of continued exercise of the Shoshone water rights on flows through the 15-Mile Reach across model versions and scenarios.

| Model + Scenario | Annual Benefit, All Years (KAF) | Annual Benefit, Dry Years (KAF) |
|---|--|--|
| 2015 Monthly Model Max w/ Relaxation - Current | 14.0 | 30.4 |
| 2024 Daily Model Max w/ Relaxation - Current | 24.0 | 32.8 |
| 2015 Monthly Model Max w/ Relaxation - Future | 25.5 | 38.6 |
| 2024 Daily Model Max w/ Relaxation - Future | 26.8 | 36.6 |
| 2024 Daily Model Baseline - Current | 24.2 | 33.1 |
| 2024 Daily Model Baseline - Future | 26.9 | 36.8 |

The results presented in this Addendum reaffirm the benefit of the Shoshone Call under both Baseline and Max Shoshone scenarios, particularly during dry years, in keeping additional water in the 15-Mile Reach when compared to river conditions absent utilization of the Shoshone water rights. Results indicate that full use of the Shoshone water rights does not negatively impact Reclamation projects when compared to the Baseline scenario, nor does it impact the water users that benefit from and/or provide water in support of those federal projects. Also notable is the similarity between the Baseline and Max with Relaxation results for the 2024 daily UCRM, which further validates the use of the Max with Relaxation scenario yields in the original analysis.

JOINT MEMORANDUM

TO: United States Bureau of Reclamation

FROM: Bruce C. Walters, Colorado River Water Conservation District

Kirsten M. Kurath, on behalf of the Orchard Mesa Irrigation District and the
Grand Valley Water Users Association

Frederick G. Aldrich, on behalf of the Grand Valley Irrigation Company

RE: The Shoshone Water Rights, the Orchard Mesa Check Case, and Green Mountain
Reservoir's Historic Users Pool "Surplus" Releases to the 15-Mile Reach

The Colorado River Water Conservation District and a coalition of West Slope governments, municipalities, and major water entities seek to secure the permanent protection of the river flow regime created by the historical exercise of the "Shoshone Water Rights" as part of the Shoshone Water Rights Preservation Project.¹ Ensuring the continuation of this critical flow regime also protects a number of associated benefits downstream of the Shoshone Power Plant, including the availability of water to the 15-Mile Reach in the Grand Valley.

The Shoshone Water Rights are a foundational component of the administration of the upper Colorado River, from the headwaters in Grand County, Colorado, downstream to the Colorado-Utah state line. Maintenance of the historical exercise of the Shoshone Water Rights is critical to the annual determination by a group of water users in the Grand Valley to declare a "surplus" of water stored in Green Mountain Reservoir's Historic Users Pool ("HUP Surplus"). In most years, the HUP Surplus provides the single largest source of upstream storage available for release to supplement low flows in the 15-Mile Reach,² thereby supporting the substantial benefits to the 15-Mile Reach of the Colorado River Programmatic Biological Opinion. The continued maintenance of the historical flow regime created by the exercise and administration of the Shoshone Water Rights will ensure that the call attributable to the senior "Cameo" group of water rights in the Grand Valley (the "Cameo Call") is reduced in amount and duration, reducing the amount of time that the Cameo Call "sweeps" the river just above the 15-Mile Reach and increasing the times during which there will be HUP Surplus available to benefit the 15 Mile Reach.

¹ As defined in the Check Case Stipulation, "Shoshone [Water] Rights" means the water rights decreed for and associated with the Shoshone Hydroelectric Power Plant, adjudicated for 1,250 c.f.s. on December 19, 1907, with an appropriation date of January 7, 1902, and adjudicated for 158 c.f.s. on February 7, 1956, with an appropriation date of May 15, 1929. *See* Stipulation, p. 3, ¶ 1.

² The "15-Mile Reach" is the reach of the Colorado River which extends, from the point at which the tailrace common to the Grand Valley Power Plant (and now the Vinelands Power Plant) and the OMID pumping plant returns to the Colorado River below the GVIC diversion dam, downstream to the confluence of the Colorado River and Gunnison River. *See* Stipulation, p. 2, ¶ 1.

History and Background.

In 1991, the Orchard Mesa Irrigation District (“OMID”), the Grand Valley Water Users Association (“GVWUA”), and the United States of America (“United States”) jointly filed a water court application in Case No. 91CW247, District Court, Water Division No. 5 (the “Check Case”). In the application, the co-applicants requested approval of an absolute water right associated with the historical operation of an appropriative right of exchange for the structure commonly referred to as the Orchard Mesa Check (the “Check”). *See* Decree, ¶¶ 6, 7.7. The Check provides a mechanism by which the water that is used by OMID, GVWUA and the United States to generate power and by OMID to lift water to a canal system on Orchard Mesa can be directed back upstream of the Grand Valley Irrigation Company’s (“GVIC’s”) diversion dam. *Id.*

Operationally, the exchange first involves the diversion of water out of the Colorado River at the Grand Valley Project’s diversion dam (the “Roller Dam”).³ *Id.* at ¶ 7.1. Once that water is diverted by GVWUA at the Roller Dam, it is then delivered through the Government Highline Canal and into the Orchard Mesa Power Canal for delivery to OMID’s pumping plant and/or the Grand Valley/Vinlands Power Plant. *Id.* at ¶¶ 7.2–7.6. Once used for power and pumping purposes, the return flow is conveyed from an afterbay to a point upstream via the Check channel into the Colorado River just above GVIC’s diversion dam, where the water may then be diverted by GVIC. *See* Figure 1.⁴ The federal facilities, rights, and interests involved in the case are fundamental to the operation of the Check and the annual determination of whether a HUP Surplus exists.

The Check Case Stipulation.

In addition to formally adjudicating the long-standing Check exchange operation, the Check Case addressed several interrelated issues on a critically important stretch of the Colorado River for the four Colorado River Endangered Fish Species.

The 1996 Check Case Stipulation (the “Stipulation”)—which was expressly incorporated into the Decree—provides that the co-applicants (including the United States and GVIC) agree to: (1) reduce the overall demand of the Cameo group of water rights from 2,260 c.f.s. to 1,950 c.f.s., and (2) annually make a declaration as to whether a HUP Surplus exists for supplementing low flows in the 15-Mile Reach. More particularly, because Check operations can reduce the amount of water released from the 66,000 acre-feet HUP on an annual basis, the Stipulation also implements the Green Mountain Reservoir HUP Operating Criteria (the “Operating Criteria,” Decree, Ex. D),

³ The Roller Dam is located on the Colorado River just above Plateau Creek and is operated by GVWUA in conjunction with the Bureau. Some of the water diverted by the Roller Dam is also delivered to GVWUA, Palisade Irrigation District, and Mesa County Irrigation District via the Government Highline Canal.

⁴ With respect to Figure 1, the Check channel is referred to as the “bypass channel.” In addition, although Figure 1 shows 310 c.f.s. going to the Vinlands Power Plant in this graphic, the United States’ power right is decreed for 400 c.f.s. during the irrigation season and there are certain conditions when the full 400 c.f.s. water right can be diverted to the power plant.

which criteria contemplates the existence of “HUP Surplus” water (i.e., the volume of water, if any, in excess of the amount of water necessary to meet the demands of HUP beneficiaries). Under the Operating Criteria, HUP Surplus water is delivered to the 15-Mile Reach through non-consumptive use contracts with Grand Valley entities.

As it relates to the Shoshone Water Rights, the Stipulation sets forth terms and conditions under which the co-applicants and GVIC agree to forgo placing an administrative call against upstream HUP beneficiaries provided the following three conditions are met:

- (1) The Check structure is physically operable;
- (2) There is at least 66,000 acre-feet of water available in Green Mountain Reservoir for the benefit of HUP beneficiaries when Green Mountain Reservoir ceases to be in-priority for its initial fill (i.e., at the end of the reservoir’s fill season); and
- (3) The Shoshone Water Rights continue to be exercised in “a manner substantially consistent with their historical operations[.]”

See Stipulation, pp. 5–6, ¶¶ 3.b., 3.b.(1) –3.b.(3).

Thus, per the Stipulation, if any one of the three conditions are not met during the period extending from April 1 through October 31, then the Operating Criteria *and* the Stipulation’s non-curtailment provisions with respect to HUP beneficiaries may be declared inoperative by the concurrence of any of the three Co-Applicants and GVIC. *Id.* at p. 6, ¶ 3.b.(5). The Stipulation provides that the immediate impact of an “inoperative” declaration is that “no water in the HUP shall be deemed to be surplus to the needs of the HUP beneficiaries.” *Id.* In other words, if the third condition in the Stipulation is not satisfied (i.e., the Shoshone Water Rights are no longer exercised in “a manner substantially consistent with their historical operations”), then the HUP Surplus could not be relied on as the single largest source of stored water available to supplement low flows in the 15-Mile Reach.

Conclusion.

The permanent protection of the river flow regime created by the historical exercise of the Shoshone Water Rights is necessary to continue the critical benefits to the 15-Mile Reach created by the operation of all the terms of the Check Case. Any failure to operate the Shoshone Water Rights “in a manner substantially consistent with historical operations,” could trigger a potential loss of the benefits that the HUP Surplus provides to all Colorado River water users within the state.

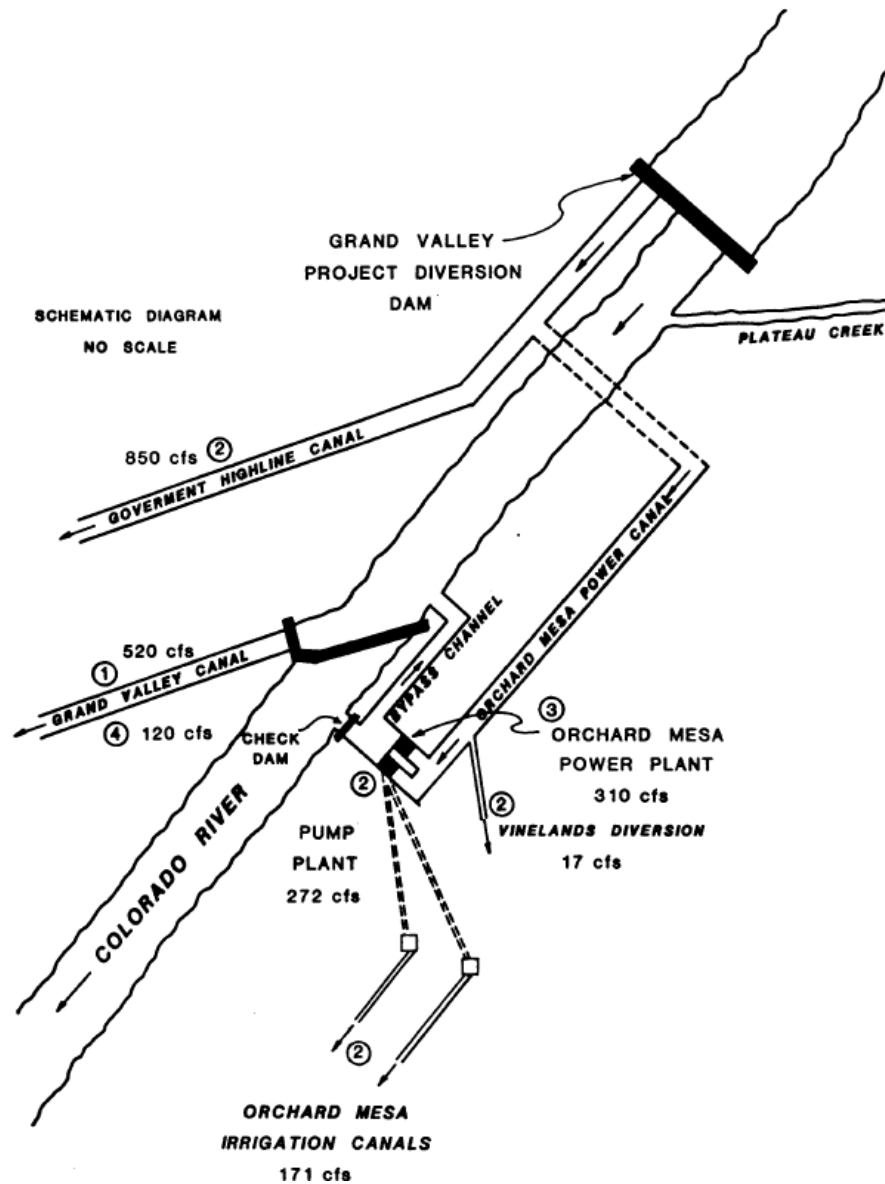


Figure 1: "Proposed Solution to the Orchard Mesa 'Check' Problem," prepared by the Colorado River Water Conservation District in cooperation with the Grand Junction Projects Office, U.S. Bureau of Reclamation, Case No. 91CW247, District Court, Water Division 5 (October 7, 1988).

COLORADO RIVER COOPERATIVE AGREEMENT

This Agreement is entered into among the following listed Signatories, to become effective upon the first business day at least seven days after the last Signatory has signed this Agreement. The Effective Date of this Agreement is the 26th day of September, 2013. The Signatories acknowledge the mutual exchange of consideration in entering into this Agreement.

City and County of Denver, acting by and through its Board of Water Commissioners (Denver Water)
Board of County Commissioners, County of Eagle
Board of County Commissioners, County of Grand
Board of County Commissioners, County of Summit
Colorado River Water Conservation District
Middle Park Water Conservancy District
Clinton Ditch and Reservoir Company
Eagle Park Reservoir Company
Eagle River Water and Sanitation District
Upper Eagle Regional Water Authority
Grand Valley Water Users Association
Orchard Mesa Irrigation District
Ute Water Conservancy District
Palisade Irrigation District
Mesa County Irrigation District
Grand Valley Irrigation Company
City of Glenwood Springs
City of Rifle

This Colorado River Cooperative Agreement consists of the 51-page agreement dated May 15, 2012 (pages 44, 45, 50, and 51 dated January 7, 2013); Attachments A through T, which have varying dates; and the CRCA Addendum dated April 5, 2012.

ARTICLE VI
Shoshone Call

A. Shoshone Call.

1. The Shoshone Power Plant, which is owned and operated by Public Service Company of Colorado, d/b/a/ Xcel Energy ("Xcel"), is located on the mainstem of the Colorado River in Glenwood Canyon. The Shoshone Power Plant produces hydroelectric energy by means of two water rights, the 1902 Shoshone Senior Right in the amount of 1250 cfs and the 1929 Shoshone Junior Right in the amount of 158 cfs (together, "Shoshone Water Rights").
2. When the Shoshone Power Plant is operating, the Shoshone Water Rights command the flow in the river by exercising the Senior Shoshone Call against upstream junior water rights. When the Senior Shoshone Call is on, upstream reservoirs cannot store water and junior water rights cannot divert unless they provide an equal volume of replacement water to the stream. Over the years, many water users have come to rely on the river flow regime created by the Senior Shoshone Call ("Shoshone Call Flows").
3. Whenever the Shoshone Power Plant is subject to a shutdown for repair, maintenance, or other reasons ("Shoshone Outage"), the Shoshone Call cannot be exercised, and Shoshone Call Flows may not be present in the river.
4. The Signatories agree that a Shoshone Outage could adversely affect water users and recreation interests on the Colorado River. Accordingly, the Signatories agree to implement the operational procedures described in this section during a Shoshone Outage (the "Shoshone Outage Protocol") to mitigate such potential adverse effects. The Signatories also agree to cooperate to achieve permanent management of the flows of the Colorado River as described in Article VI.C, whether or not the Shoshone Power Plant remains operational.

B. Shoshone Outage Protocol.

1. Outage During Irrigation Season. If a Shoshone Outage occurs during the period from March 25 through November 10 (Irrigation Season) and results in a flow of the Colorado River at the Dotsero Gauge below 1,250 cfs (not including any water released for endangered fish species purposes), then the River District, Middle Park and Denver Water agree that they will operate their systems as if the Senior Shoshone Call were on the River, resulting in a flow of not more than 1250 cfs at the Dotsero Gauge (not including any water released for endangered fish species purposes). The Shoshone Outage Protocol

will not apply to Shoshone Outages that occur during certain very dry Irrigation Seasons, as described in the following subparagraphs.

- a. The very dry Irrigation Seasons occur when the two conditions for a water shortage, as defined in paragraph 2 of the 2007 Shoshone Agreement, are met. Denver Water will make projections in March prior to March 25, and again in early May and late June to determine whether a water shortage is occurring.
 - b. If a projection made under subparagraph a above in March or May meets the conditions for a water shortage, then the Shoshone Outage Protocol will not apply during the period from that projection to the next projection. If a projection made in March or May does not meet the conditions for a water shortage, then the Shoshone Outage Protocol will apply during the period from that projection to the next projection; provided, however, that the Shoshone Outage Protocol will not apply during any period when the Shoshone Call is relaxed under the 2007 Shoshone Agreement.
 - c. If the projection made in June under subparagraph a above meets the conditions for a water shortage, then the Shoshone Outage Protocol will not apply during the remainder of the Irrigation Season that year. If the projection made in June does not meet the conditions for a water shortage, then the Shoshone Outage Protocol will apply during the remainder of the Irrigation Season that year.
2. Green Mountain Reservoir. The Signatories will cooperate with one another and use their best efforts to negotiate a separate agreement with the U. S. Bureau of Reclamation ("Reclamation") pursuant to which Reclamation would agree that if a Shoshone Outage occurs, it will continue to operate Green Mountain Reservoir as if the Senior Shoshone Call were on the river. Such agreement with Reclamation shall be subject to terms and conditions as to which the Signatories and Reclamation shall agree, including the following
- a. Any water released from storage in Green Mountain Reservoir would be debited to the appropriate account within the reservoir's 100,000 Acre-Foot Pool to which the releases were attributed, e.g., the historic users pool identified in paragraph 2 of Reclamation's January 23, 1984 Operating Policy for Green Mountain Reservoir,
 - b. Water that would have been released from the 52,000 Acre-Foot Replacement Pool had the Senior Shoshone Call been on the river shall be debited as discretionary power releases from the 100,000 Acre-Foot

Pool, unless other arrangements are made with Reclamation and the Northern Colorado Water Conservancy District.

- c. Reclamation will not be obligated to make releases from storage pursuant to this provision if water is not available in the 100,000 Acre-Foot Pool or if the total volume of Green Mountain Reservoir storage accounts is less than an amount to be agreed upon by the West Slope Signatories and Reclamation.

- 3. Outage During Winter Season. If a Shoshone Outage occurs during the period from November 11 to March 24 (Winter Season): (1) as a result of conditions other than scheduled maintenance on the Shoshone power plant facilities, and (2) if flows at the Dotsero Gauge are at or below 900 cfs, the River District and Denver Water agree that they will operate their systems as if the Senior Shoshone Call were on the river, subject to the following:

The Shoshone Outage Protocol will not apply fully to Shoshone Outages that occur during certain very dry Winter Seasons, when the overall storage in Denver Water's system is less than 79% of capacity on November 1. For purposes of this paragraph, the reservoirs that will be considered in determining overall storage are those reservoirs listed in Exhibit A to the 2007 Shoshone Agreement, but excluding any reservoirs under storage restrictions due to maintenance, repairs or orders from the Colorado State Engineer.

- a. If the storage is less than 79%, but more than 63%, then the Shoshone Outage Protocol will be applied at half the normal effect during that Winter Season. For example, if Denver Water would be required to bypass or replace 60 c.f.s. under the full operation of the Shoshone Outage Protocol, Denver Water would be required to bypass or replace 30 c.f.s. if the Shoshone Outage Protocol is applied at half the normal effect.
 - b. If the storage is equal to or less than 63%, but more than 49%, then the Shoshone Outage Protocol will be applied at one-fourth the normal effect during that Winter Season.
 - c. If the storage is equal to or less than 49%, then the Shoshone Outage Protocol will not be applied during that Winter Season.
- 4. The Signatories will cooperate with one another and use their best efforts to:
 - a. Obtain the agreement of other diverters to participate in the Shoshone Outage Protocol.
 - b. Obtain the agreement of the State of Colorado water administration officials to shepherd water released from upstream reservoirs or

otherwise bypassed from upstream water rights under the Shoshone Outage Protocol to the Grand Valley under a donated instream flow, a municipal recreation delivery contract or other acceptable arrangement, and to refrain from accounting for releases from storage under the Shoshone Outage Protocol as storable inflow.

C. Permanency of Shoshone Call Flows.

1. It is the goal of the Signatories to achieve permanent management of the flow of the Colorado River so that the flow mimics the Shoshone Call Flows, whether or not the Senior Shoshone Call is on the river and whether or not the Shoshone Power Plant remains operational.
2. Denver Water and the River District agree to operate their systems on a permanent basis under the Shoshone Outage Protocol described in Article VI.B, even if the Shoshone Power Plant ceases operations altogether, and regardless of whether the plant is acquired under Article VI.D, subject to the following conditions:
 - a. The relaxation provisions described in Article VI.E below remain in full force and effect.
 - b. The Shoshone Outage Protocol would not apply for 17 cumulative days during the Winter Season, to duplicate the effect of the current scheduled outages for maintenance.
3. The Signatories agree to use their best efforts to work with Xcel Energy, other diverters, Reclamation and the State of Colorado water administration officials to devise and implement a mechanism or combination of mechanisms that will permanently preserve the Shoshone Call Flows. In addition to the amounts provided in Article VI.E.1.c., Denver Water agrees to pay one-third of the costs, not to exceed \$100,000, incurred by West Slope Signatories to begin the process of implementing a mechanism to preserve the Shoshone Call Flows on a permanent basis. If total costs exceed \$300,000, the Signatories will confer with regard to further actions.

D. West Slope Acquisition of Shoshone Assets

1. West Slope water users believe that one means to ensure the permanent maintenance of the Shoshone Call is the acquisition and operation of the Shoshone Power Plant and Shoshone Water Rights (the "Shoshone Assets") by a West Slope governmental entity that is mutually acceptable to the West Slope Signatories ("West Slope Governmental Entity").
2. Within twenty-four (24) months after the effective date of this Agreement ("Investigation Period"), any of the West Slope Signatories may agree among

themselves and at their own cost, to undertake and complete an investigation of the viability of purchasing the Shoshone Assets and operating the Shoshone Power Plant (the "Initial Investigation"). The Initial Investigation may include direct negotiations with Xcel; the hiring of consultants necessary to evaluate the Plant's physical and financial condition and the value of the Shoshone Assets; an evaluation of the legal and regulatory requirements that must be met in order to transfer the Shoshone Assets to a West Slope Governmental Entity; an evaluation of the appropriate West Slope Governmental Entity to acquire and operate the Shoshone Assets and the steps necessary to create such an entity, if a new entity is to be created; and any other matters that the West Slope Signatories believe are necessary or desirable. Denver Water shall assist the West Slope Signatories upon request in undertaking and completing the investigations during the Investigation Period. The West Slope Signatories may agree among themselves to extend the Investigation Period.

3. If the Initial Investigation determines that it is feasible for a West Slope Governmental Entity to acquire and operate the Shoshone Assets and if Xcel is willing to sell or otherwise transfer the Shoshone Assets to a West Slope Governmental Entity, the West Slope Governmental Entity may pursue the transfer of the Shoshone Assets. Denver Water agrees that it will support such acquisition and will take such reasonable actions as may be necessary to assist the West Slope Governmental Entity in completing the acquisition of the Shoshone Assets. Upon notification by any of the West Slope Governmental Entity of its intent to acquire the Shoshone Assets, Denver Water agrees not to assert its right under paragraph 13 of the 2007 Shoshone Agreement regarding the method of disposition of the Shoshone Water Rights.
4. Denver Water shall not be obligated to pay any of the purchase price for the Shoshone Assets if other mechanisms are reasonably available to preserve the Shoshone Call Flows. If other mechanisms are not reasonably available, and purchase of the Shoshone Assets is determined to be the best viable option to preserve the Shoshone Call Flows, then Denver Water agrees to contribute to the purchase price in a negotiated amount that is proportionate to its share of the overall benefits created by the purchase, and reasonable as compared to the financial contributions to the purchase price by other parties.
5. If a West Slope Governmental Entity acquires the Shoshone Assets, the Shoshone Call relaxation provisions described in Section VI.E below, shall remain permanently in effect.

E. Relaxation of Shoshone Call.

1. Existing Call Relaxation Agreement. Denver Water and Xcel are parties to the 2007 Shoshone Agreement, a copy of which is attached as Attachment S.

The 2007 Shoshone Agreement currently is set to expire on December 31, 2032. The Signatories agree that the Shoshone Call relaxation provisions of the 2007 Shoshone Agreement shall remain in effect during its term and any renewal thereof.

- a. Denver Water agrees that, except as provided in Articles V and VI.E.2, it will not seek any relaxation of the Shoshone Call, other than a renewal of the specific provisions of the 2007 Shoshone Agreement beyond the year 2032.
- b. The West Slope Signatories will not oppose a renewal of the 2007 Shoshone Agreement, provided that the Shoshone Outage Protocol remains in effect.
- c. If the relaxation of the Shoshone Call is made permanent and Denver Water's yield is increased as a result, Denver Water agrees that 500 acre-feet of the increased yield (Relaxation Water) will be made available as potable water for use as blending water in a project using reusable return flows as described in Article I.B.2.e. The water supply created by the Relaxation Water will be added to the list of permissible fixed-amount contracts listed in Article I.B.1. In return for the availability of the Relaxation Water, the recipients must agree to pay the 2010 System Development Charge (SDC) applicable to potable water served outside the Combined Service Area. Denver Water will transmit the SDCs attributable to the Relaxation Water into a Relaxation Water Fund to be used (a) to contribute to the acquisition of the Shoshone Assets under Article VI.D; or (b) to implement a mechanism or combination of mechanisms that will permanently preserve the Shoshone Call Flows. It is anticipated that advance financing may be needed to accomplish the purposes described in this paragraph. The Signatories agree to consult with each other on an appropriate financing mechanism, should one be needed. It is also anticipated that the SDCs for the Relaxation Water may be paid pursuant to a payment schedule. If the Relaxation Water Fund is not fully expended for the purposes described in this paragraph, the money shall be used to contribute to the costs of a future cooperative project, determined by the River District and Denver Water to be beneficial to both the West Slope and the East Slope.

2. Expansion of Call Relaxation Period for Severe Drought Conditions. The 2007 Shoshone Agreement provides that the Shoshone Call may be relaxed during the period from March 14 until May 20, inclusive ("Call Relaxation Period"), under the conditions specified in the 2007 Shoshone Agreement. Denver Water desires to extend the Call Relaxation Period back into the winter months during extreme drought periods. The West Slope Signatories agree to support the amendment of the 2007 Shoshone Agreement to provide

for the relaxation of the Senior Shoshone Call down to 704 cfs (a “one-turbine call”) for an expanded period during the winter months (“Expanded Call Relaxation Period”), subject to the following terms and conditions:

- a. An Expanded Call Relaxation Period may occur under either of the following circumstances:
 - i. The Senior Shoshone Call may be relaxed to a one-turbine call beginning on November 11 if Denver Water has banned outdoor residential lawn watering beginning no later than August 1, and the ban has remained in effect continuously from its inception through November 11.
 - ii. The Senior Shoshone Call may also be relaxed to a one-turbine call beginning three (3) days after the date that the Denver Water Board formally adopts a drought declaration requiring that outdoor residential lawn watering be prohibited during the following irrigation season. The call relaxation under this section only applies to the period from November 11 until March 14 of the following year.
- b. Denver Water will pay for power replacement costs as provided for in the 2007 Shoshone Agreement.
- c. Denver Water will provide ten percent (10%) of the net water savings as defined in the 2007 Shoshone Agreement for use by West Slope Signatories. The West Slope Signatories will allocate the 10% as they may determine pursuant to any future agreement among them.
- d. The Expanded Call Relaxation Period will end the earlier of:
 - i. The date Denver Water rescinds its ban on outdoor residential lawn watering; or
 - ii. The date a Cameo Call is placed on the river; or
 - iii. March 14 of the year following implementation of the Extended Call Relaxation Period if implementation occurs on or prior to December 31; or March 14 of the year in which the Expanded Call Relaxation Period was implemented if implementation occurs on or after January 1.
- e. Any relaxation of the Shoshone Call after March 14 of any given year shall occur only as provided in the 2007 Shoshone Agreement.

3. Call Relaxation Mitigation. The \$500,000 to be placed in a special fund by Denver Water pursuant to Article III.G of this Agreement shall be managed and utilized as follows:
 - a. The proceeds of this fund will be used to help offset the impacts of, or prepare for, a call relaxation pursuant to the 2007 Shoshone Agreement or during the Expanded Call Relaxation Period, or a Shoshone Outage during the Winter Season pursuant to Section VI.B.3, above.
 - b. In order for a municipal water provider to access the funds described in this subsection, the provider must either be a signatory to this Agreement or must be located in Garfield County and agree to be bound by the terms and conditions of this Agreement.
 - c. The West Slope Signatories at their discretion may utilize funds available to any of them pursuant to Article III of this Agreement or the West Slope Fund to either replace or increase the funding for this special fund as may be necessary or desirable from time to time.
- F. Environmental and Recreational Pilot Project. The Signatories agree to evaluate a pilot project to determine the feasibility of implementing a partial Shoshone Call relaxation in non-critical winter months and dedicating the saved water to environmental and recreation purposes.
- G. Support for Glenwood Springs RICD. The City of Glenwood Springs currently has whitewater features located below the confluence of the Colorado River and the Roaring Fork River near Glenwood Springs, Colorado. Glenwood Springs currently does not have an adjudicated water right for these white water features but anticipates filing for one at some point in the future. In addition, Glenwood Springs anticipates creating additional white water features on the reach of the Colorado River between the Shoshone Power Plant and South Canyon on the main stem of the Colorado River. Denver Water will not oppose the filing of a water rights application for a Recreational In-Channel Diversion ("RICD") for the existing and proposed structures by Glenwood Springs; provided that any such application filed for any proposed structure above the confluence of the Roaring Fork and Colorado Rivers does not: (1) Claim a flow rate that exceeds the amount of water needed to satisfy the senior Shoshone Call for 1,250 cfs at the Dotsero gage; (2) Seek an amount of water in excess of that needed to replicate historic operations under the Senior Shoshone Call; or (3) Impair Denver's ability to divert under Article VI.

As to structures located below the confluence of the Roaring Fork and Colorado Rivers, Denver and Glenwood Springs recognize that the contributing flows of the two rivers make it difficult to predict the exact effect of a RICD on flows above the confluence. Glenwood Springs agrees to consult with Denver regarding such application prior to filing.

Addendum to Colorado River Cooperative Agreement

The Signatories recognize that they have a history of cooperation with water users of all descriptions, adjusting their operations and providing water on a temporary basis to respond to the operational needs and emergency circumstances of others. The Signatories will work in good faith to support such cooperative efforts. Except as specifically described below, the following activities are not intended to be governed or constrained by the CRCA:

- Emergency potable water interconnect agreements that allow other municipal water providers to make a physical interconnection with the Denver Water's water system to allow the Denver Water's water to be delivered on a temporary basis to such provider during emergency conditions;
- Water made available temporarily by Denver Water without charge during an emergency situation that poses a risk to public safety, public health or the environment;
- Exchanges of water by Denver Water with another entity to accommodate operational constraints caused by maintenance, repair or other similar activities where the entity agrees to replace, rather than purchase, the water. Such exchanges shall be treated as spot sales for the purposes of and subject to Article I.B.3.a.ii, 3.a.iii, and 3.a.iv.

No failure on the part of a party to exercise, and no delay in exercising, any right, privilege or power under the CRCA shall ever give rise to any argument, claim, defense or theory of acquiescence, waiver, bar, merger, issue or claim preclusion, stare decisis, promissory estoppel, equitable estoppel, laches, unclean hands or any other similar position or defense concerning any factual or legal position, or to any administrative or judicial practice or precedent, by or against any of the Signatories.

APPENDIX 14e

SHOSHONE OUTAGE PROTOCOL
AGREEMENT NUMBER 13XX6C0129

INCLUDING THE
UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION,
THE STATE OF COLORADO, DIVISION OF WATER RESOURCES,
THE CITY AND COUNTY OF DENVER, ACTING BY AND THROUGH ITS BOARD OF
WATER COMMISSIONERS,
THE COLORADO RIVER WATER CONSERVATION DISTRICT,
THE MIDDLE PARK WATER CONSERVANCY DISTRICT,
THE NORTHERN COLORADO WATER CONSERVANCY DISTRICT,
THE MUNICIPAL SUBDISTRICT, NORTHERN COLORADO WATER
CONSERVANCY DISTRICT,
THE GRAND VALLEY WATER USERS ASSOCIATION,
THE ORCHARD MESA IRRIGATION DISTRICT, AND
THE GRAND VALLEY IRRIGATION COMPANY

THIS AGREEMENT is made this 27th day of June, 2016, and includes the UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION (Reclamation), the STATE OF COLORADO DIVISION OF WATER RESOURCES (DWR), THE CITY AND COUNTY OF DENVER acting by and through its BOARD OF WATER COMMISSIONERS (Denver Water), the COLORADO RIVER WATER CONSERVATION DISTRICT (River District), the MIDDLE PARK WATER CONSERVANCY DISTRICT (Middle Park), the NORTHERN COLORADO WATER CONSERVANCY DISTRICT (Northern Water), the MUNICIPAL SUBDISTRICT, NORTHERN COLORADO WATER CONSERVANCY DISTRICT (Subdistrict), the GRAND VALLEY WATER USERS ASSOCIATION, the ORCHARD MESA IRRIGATION DISTRICT, and the GRAND VALLEY IRRIGATION COMPANY, hereinafter collectively referred to as the "Parties".

I. EXPLANATORY RECITALS

The following statements are made in explanation:

- A. When the Shoshone Power Plant is operating, the Shoshone Call can command the flow in the Colorado River and its tributaries in certain stream conditions by exercising the Shoshone Water Rights against upstream junior water rights. When the Shoshone Call is being administered, junior water rights cannot store or divert water without providing replacement water to offset their depletions to the river system as necessary to prevent injury.
- B. Whenever the Shoshone Power Plant is subject to a shutdown for repair, maintenance, or other reasons, the Shoshone Call cannot be exercised, and river flows may drop.
- C. Certain Parties desire to keep the flow regime of the Colorado River as it has been historically influenced by the Senior Shoshone Call.

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- D. The Parties agree to implement the operational procedures described in this agreement during a Shoshone Outage.
- E. This Agreement will provide greater certainty for the administration of water rights.
- F. As is explicitly provided for in this Agreement, certain Parties to this Agreement are only agreeing to be bound by specifically identified sections of this Agreement.

NOW, THEREFORE, in consideration of the foregoing recitals and mutual covenants hereinafter set forth, the Parties hereto agree as follows:

II. DEFINITIONS

Where used herein, unless specifically expressed otherwise or obviously inconsistent with the intent herein, the following definitions apply to this Agreement. Nothing in these definitions alters or amends any existing or future agreement between all or various Parties to this Agreement:

- A. “15-Mile Reach” is the reach of the Colorado River which extends from the point at which the tailrace common to the Grand Valley Power Plant and the Orchard Mesa Irrigation District pumping plant returns to the Colorado River below the Grand Valley Irrigation Company diversion dam, downstream to the confluence of the Colorado River and Gunnison River (definition verbatim from the Stipulation and Agreement incorporated into the decree entered in Case No. 91CW247, Colorado Water Division 5).
- B. “2007 Shoshone Agreement” is an agreement between Denver Water and Public Service Company of Colorado d/b/a Xcel Energy, effective January 1, 2007, concerning reduction of the Shoshone Call.
- C. “Dotsero Gauge” is Gauge Number 09070500 on the Colorado River, near Dotsero, Colorado, which is operated by the United States Geological Survey, Colorado Water Science Center.
- D. “End of Fill Season” is the end of the Green Mountain Reservoir fill season as defined in the Green Mountain Reservoir Administrative Protocol.
- E. “Grand Valley Entities” are the Grand Valley Water Users Association, the Orchard Mesa Irrigation District, and the Grand Valley Irrigation Company.
- F. “Green Mountain Reservoir 1935 First Fill Storage Right” is the storage right for Green Mountain Reservoir with a priority date of August 1, 1935, from the Blue River and its tributaries in the amount of 154,645 acre-feet (AF).
- G. “Green Mountain Reservoir 1935 Senior Refill Storage Right” is the storage refill right for Green Mountain Reservoir with a priority date of August 1, 1935, from the Blue River and its tributaries in the amount of 6,316 AF.

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- H. “Green Mountain Reservoir 1935 Direct Flow Hydropower Right” is the direct-flow right with a priority date of August 1, 1935, from the Blue River and its tributaries in the amount of 1,726 cubic feet per second (cfs) for the generation of electrical power at the Green Mountain Power Plant.
- I. “Green Mountain Reservoir Administrative Protocol” is the protocol for administration of Green Mountain Reservoir that will result from the procedures that will be specified in the Green Mountain Reservoir Protocol Agreement by and among Reclamation, Denver Water, Northern Water, the Subdistrict, the City of Colorado Springs acting through its Utilities Department, River District, Middle Park, Grand Valley Water Users Association, Orchard Mesa Irrigation District, Grand Valley Irrigation Company, Palisade Irrigation District, Climax Molybdenum Company, Ute Water Conservancy District, and the State Engineer and Division Engineer for Water Division 5, Colorado Division of Water Resources.
- J. Green Mountain Reservoir Historic User Pool Operating Criteria is the operating criteria set forth in Exhibit D of the Orchard Mesa Check Case Stipulation and Agreement.
- K. “Green Mountain Reservoir Marketing Allocation” is a 20,000 AF marketable yield available for contracting from the Power Pool.
- L. “Green Mountain Reservoir Operating Policy” is the Operating Policy for Green Mountain Reservoir, Colorado-Big Thompson Project, Colorado (Volume 48, No. 247 Federal Register December 22, 1983; as amended in Volume 52, No. 176 Federal Register September 11, 1987).
- M. “Historic Users’ Pool” (“HUP”) is water to be released from the Green Mountain Reservoir Power Pool as described in paragraphs 2 and 3 of the Green Mountain Reservoir Operating Policy.
- N. “Non-Winter Season” is the period of any year from March 25 through November 10 of any year.
- O. “Orchard Mesa Check Case Stipulation and Agreement” is the September 4, 1996, agreement incorporated into the decree entered October 1, 1996 in Case No. 91CW247, District Court, Colorado, Water Division 5.
- P. “Power Pool” is 100,000 AF of water stored primarily for power purposes in Green Mountain Reservoir and available for such other uses in western Colorado as provided in Senate Document 80.
- Q. “Senate Document 80” is the “Manner of Operation of Project Facilities and Auxiliary Features” section of the Synopsis of Report document referenced in the Act of August 9, 1937, 50 Stat 564, 75 Congress, 1st Session, which authorized the Colorado-Big Thompson Project.

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- R. “Senior Shoshone Call” is a request to the state water officials to curtail diversions of junior water rights to produce a flow at the Dotsero Gauge sufficient for diversion at the Shoshone Dam of 1,250 cfs for power purposes at the Shoshone Power Plant.
- S. “Shepherded Streamflow Reservoir Releases” are those reservoir releases in rate and volume made for the reservoir owners’ purposes of increasing stream flows either at the Shoshone Power Plant, in the 15-Mile Reach, or at other stream locations at rates and volumes in excess of the stream flows that would exist at these locations in the absence of such reservoir releases (including streamflows that may exist as a result of releases, power diversions, or bypasses made pursuant to this Agreement), provided such releases are made for decreed beneficial uses for instream or in-channel purposes at any such locations including, but not limited to, endangered fish species purposes within the 15-Mile Reach.
- T. “Shoshone Call” is a request to the state water officials to curtail diversions of junior water rights to produce a flow for beneficial use at the Shoshone Power Plant pursuant to the Shoshone Senior Right or the Shoshone Junior Right.
- U. “Shoshone Junior Right” is the water right decreed for and associated with the Shoshone Power Plant adjudicated for 158 cfs on February 7, 1956, with an appropriation date of May 15, 1929.
- V. “Shoshone Outage” is whenever the Senior Shoshone Call cannot be fully exercised because the Shoshone Power Plant is subject to a shutdown for repair, maintenance, or other reasons. For the purposes of this Agreement, a Shoshone Outage does not include a cumulative total of 17 days during January and February of each Winter Season, when the Shoshone Senior Right is not calling for water due to regularly scheduled maintenance at the Shoshone Power Plant.
- W. “Shoshone Outage Protocol” is a combination of the respective described actions to be taken by each of the Parties.
- X. “Shoshone Power Plant” is owned and operated by Public Service Company of Colorado, d/b/a/ Xcel Energy (“Xcel”), and is located on the mainstem of the Colorado River in Glenwood Canyon. The Shoshone Power Plant produces hydroelectric energy by means of the Shoshone Water Rights.
- Y. “Shoshone Senior Right” is the water right decreed for and associated with the Shoshone Power Plant adjudicated for 1,250 cfs on December 9, 1907, with an appropriation date of January 7, 1902.
- Z. “Shoshone Water Rights” are both the Shoshone Senior Right and the Shoshone Junior Right.

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- AA. “Start of Fill Date” is the date between April 1 and May 15 fixed annually by the Secretary of the Interior as the start of fill of Green Mountain Reservoir.
- BB. “Windy Gap Project” and “Windy Gap Firming Project” shall have the meanings defined in the Windy Gap Firming Project Intergovernmental Agreement (“WGFP IGA”).
- CC. “Winter Season” is the period from November 11 of any calendar year through March 24 of the next calendar year.

III. TERM OF AGREEMENT

- A. This Agreement will remain in effect for 40 years unless terminated sooner pursuant to paragraph III.B, below. Any of the Parties have the right to request renewal of this agreement for an additional 40-year term upon written request to all other Parties on or before two years prior to the expiration of this agreement. The Parties agree to negotiate any requests for renewal in good faith.
- B. This Agreement may be terminated upon written mutual agreement of all Parties.
- C. This Agreement may be amended at any time by written consent of all Parties hereto.
- D. Notwithstanding paragraph III.B, Reclamation may, at any time, terminate its participation in this Agreement for just cause upon providing written notice to all other Parties.

**IV. DESCRIPTION OF SHOSHONE OUTAGE PROTOCOL
ACTION BY PARTIES**

- A. Actions by the River District, Middle Park and Denver Water.
 - 1. This Section IV.A is an Agreement between the River District, Middle Park and Denver Water. Other parties are not bound by this Section IV.A.
 - 2. Outage During the Non-Winter Season. If a Shoshone Outage occurs during the Non-Winter Season and results in a flow of the Colorado River at the Dotsero Gauge below 1,250 cfs (not including Shepherded Streamflow Reservoir Releases), then the River District, Middle Park and Denver Water agree that they will operate their water resources as if the Senior Shoshone Call was being administered in order to result in a flow of not more than 1,250 cfs at the Dotsero Gauge (not including Shepherded Streamflow Reservoir Releases).
 - 3. Denver Water, the River District, and Middle Park will not participate in the Shoshone Outage Protocol during periods of certain very dry Non-Winter Seasons that meet the definition of a Water Shortage in accordance with this paragraph IV.A.3. For the purposes of this paragraph IV.A, a Water Shortage exists when the following two conditions exist:

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- a. Using the procedures described in Exhibit A of the 2007 Shoshone Agreement (copy attached hereto for reference) and based on the "normal" scenario, Denver Water predicts that reservoir storage in its system on July 1 will be at or below 80% full; and
 - b. The "most probable" forecast of streamflow prepared by the Natural Resources Conservation Service (NRCS) or jointly by NRCS and the Colorado Basin River Forecast Center (or such other forecast that the River District, Denver Water and Middle Park agree to use) indicates that the April – July undepleted flow of the Colorado River at the Kremmling gage will be less than or equal to 85% of average. If no forecast for the Kremmling gage is available, then the Dotsero gage will be used.
4. Denver Water will make projections prior to March 25th, and again in early May and late June to determine whether a Water Shortage exists.
 - a. If a projection made under paragraph IV.A.3 above meets the conditions for a Water Shortage, then the Shoshone Outage Protocol will not apply during the period from that projection to the next projection. If a projection does not meet the conditions for a Water Shortage, then the Shoshone Outage Protocol will apply during the period from that projection to the next projection; provided, however, that the Shoshone Outage Protocol will not apply during any period when the Shoshone Call is relaxed under the 2007 Shoshone Agreement.
 - b. If the projection made in June under paragraph IV.A.3 above meets the conditions for a Water Shortage, then the Shoshone Outage Protocol will not apply during the remainder of the Non-Winter Season that year. If the projection made in June does not meet the conditions for a Water Shortage, then the Shoshone Outage Protocol will apply during the remainder of the Non-Winter Season that year.
5. Outage During Winter Season. If a Shoshone Outage occurs during the Winter Season and flows at the Dotsero Gauge are at or below 900 cfs, the River District, Denver Water, and Middle Park agree that they will operate their water resources as if the Senior Shoshone Call were on the Colorado River in the amount of 900 cfs, subject to the following:

The Shoshone Outage Protocol will not apply fully to Shoshone Outages that occur during certain very dry Winter Seasons, when the overall storage in Denver Water's system is less than 79% of capacity on November 1. For purposes of this Agreement, the reservoirs that will be considered in determining overall storage for Denver Water are those reservoirs listed in Exhibit A to the 2007 Shoshone Agreement (Antero, Eleven Mile, Cheesman, Marston, Chatfield, Gross, Ralston,

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Dillon, Williams Fork, and Wolford Mountain), but excluding any reservoirs under storage restrictions due to maintenance, repairs or orders from the Colorado State Engineer.

- a. If the storage is less than 79%, but more than 63% of capacity, then the Shoshone Outage Protocol will be applied at half the normal effect during that Winter Season. For example, if Denver Water would be required to bypass or replace 60 cfs under the full operation of the Shoshone Outage Protocol, Denver Water would be required to bypass or replace 30 cfs if the Shoshone Outage Protocol is applied at half the normal effect.
 - b. If the storage is equal to or less than 63%, but more than 49% of capacity, then the Shoshone Outage Protocol will be applied at one-fourth the normal effect during that Winter Season.
 - c. If the storage is equal to or less than 49% of capacity, then the Shoshone Outage Protocol will not be applied during that Winter Season.
6. As between the River District, Denver Water, and Middle Park, releases from Wolford Mountain Reservoir shall be accounted to the various accounts at Wolford Mountain Reservoir in the same manner that would have occurred if the Shoshone Senior Right had been exercised.
 7. Prior to any final decree that is entered to amend the Windy Gap Project water rights to implement the Windy Gap Firming Project, Middle Park's water resources in this Shoshone Outage Protocol will be limited to water released on Middle Park's behalf from Wolford Mountain Reservoir. Subsequent to any final decree that is entered to amend the Windy Gap Project water rights to implement the Windy Gap Firming Project, Middle Park's water resources in this Shoshone Outage Protocol may include water released on its behalf from Wolford Mountain Reservoir, and Windy Gap Project water released from Granby Reservoir. Any such release of Middle Park's Windy Gap Project water resources will be consistent with the water court decrees for such resources and with any final Windy Gap Firming Project Intergovernmental Agreement by and between the Municipal Subdistrict, its Windy Gap Firming Project Water Activity Enterprise, Board of County Commissioners of Grand County, Middle Park, River District, and Northwest Colorado Council of Governments.

B. Actions by the Subdistrict.

1. The Municipal Subdistrict agrees to the operation by Reclamation of Green Mountain Reservoir as contemplated by this Agreement and will not object to the operation of Green Mountain Reservoir in the manner described in this Agreement, unless any person or entity (other than the Municipal Subdistrict or Northern Water):

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- a. Objects, in any judicial or administrative forum, to the operation of the Windy Gap Project or Windy Gap Firming Project in the manner described in this Agreement;
 - b. Asserts, in any judicial or administrative forum, that an historic or a future operation of the Windy Gap Project or Windy Gap Firming Project including, without limitation, the performance of this Shoshone Outage Protocol in accordance with this Agreement, is in violation of Senate Document No. 80, the Blue River Decree, or the decrees for the Windy Gap Project or Windy Gap Firming Project; or
 - c. Asserts, in any judicial or administrative forum, that bypasses of water otherwise divertible by the Windy Gap Project count toward Windy Gap Project diversions.
2. Operation of Windy Gap Project.
- a. Nothing in this Agreement shall alter or amend the Intergovernmental Agreement between the Subdistrict, Grand County, Middle Park, the Northwest Colorado Council of Governments (NWCCOG) and the River District fully executed in 2016 ("WGFP IGA"), including, without limitation, Paragraph IV.K. of the WGFP IGA, which remains in full force and effect and provides, with respect to the subject of the Shoshone Outage Protocol, that [abbreviations and short-forms in the quoted text below rely on definitions set forth in the WGFP IGA]:

K. Shoshone Outage Protocol.

- 1) For purposes of this WGFP IGA, the Shoshone Outage Protocol means that the Windy Gap Project and WGFP will operate as described in this paragraph IV.K.1), IV.K.2), and IV.K.3) during periods when the Shoshone Power Plant is shutdown or otherwise not able to divert the full amount of its 1,250 cfs senior water right due to repair, maintenance, or other reasons ("Shoshone Outage"). When the Windy Gap Project's participation in the Shoshone Outage Protocol is in effect pursuant to this WGFP IGA, the Windy Gap Project and WGFP will bypass the amount of water that the Windy Gap Project and WGFP would have been required to bypass if the Senior Shoshone Call had been in effect in order to result in a flow of not more than 1,250 cfs at the Dotsero gage on the Colorado River (not including any water released for endangered fish species purposes). For purposes of this WGFP IGA, a Shoshone Outage does not include a shutdown of the Shoshone Power Plant for regularly scheduled maintenance for a cumulative period of 17-days during the period of November 1 through March 15.

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- 2) The Windy Gap Project and WGFP will operate in accordance with the Shoshone Outage Protocol from July 16-April 14 of each year. Prior to WGFP Completion, the Windy Gap Project and WGFP may operate in accordance with the Shoshone Outage Protocol during the period of April 15-July 15 on a voluntary cooperative basis. Following WGFP Completion, the Windy Gap Project and WGFP will operate in accordance with the Shoshone Outage Protocol during the period April 15 – July 15 at any time during this period when the combined amount of Windy Gap Project Water stored in Chimney Hollow Reservoir and Windy Gap Project Water stored on behalf of WGFP Participants in Granby Reservoir is greater than 50% of the Active Capacity of Chimney Hollow Reservoir.
 - 3) Participation in the Shoshone Outage Protocol by the Windy Gap Project and WGFP during the period of April 15-July 15 will be limited to a total maximum volume of foregone pumping equal to 10,000 acre feet (30 days with one pump running) in one year, a total of 20,000 acre feet (60 days with one pump running) in any 3 consecutive year period, and a total of 30,000 acre feet (90 days with one pump running) in any 5 consecutive year period.
 - 4) The Subdistrict agrees that it will participate in good faith in negotiations to achieve permanent management of the flow of the Colorado River to address certain flow changes that result during a Shoshone Outage.
3. Nothing in this Agreement shall create, modify, alter or amend the contractual relationships between Reclamation and the Municipal Subdistrict.
 4. No Waiver.
 - a. Except as expressly provided herein, this Agreement shall never give rise to any claim, defense, or theory of acquiescence, bar, merger, issue or claim preclusion, promissory estoppel, equitable estoppel, waiver, laches, unclean hands or any other similar position or defense concerning any factual or legal position regarding the parties respective positions regarding the operation of the Windy Gap Project and Windy Gap Firming Project. This Agreement shall not have the effect of precedent or preclusion on any factual or legal issue in any other matter. The Subdistrict expressly reserves its rights to assert any legal or factual position or challenge the legal or factual position taken by any other party on any other matter

C. Actions by Northern Water.

AGREEMENT NUMBER 13XX6C0129

1. Northern Water agrees to the operation by Reclamation of Green Mountain Reservoir, as contemplated by this Agreement and will not object to the operation of Green Mountain Reservoir in the manner described in this Agreement, unless any person or entity (other than the Municipal Subdistrict or Northern Water):
 - a. Objects, in any judicial or administrative forum, to the operation of Green Mountain Reservoir in the manner described in the Shoshone Protocol Agreement; or
 - b. Asserts, in any judicial or administrative forum, that an historic or a future operation of Green Mountain Reservoir or the Colorado-Big Thompson Project including, without limitation, the performance of this Shoshone Outage Protocol in accordance with this Agreement, is in violation of Senate Document No. 80 or the Blue River Decree.
2. This Agreement meets the requirements of the first sentence of Paragraph 3 of the Intergovernmental Agreement between Northern Water, Grand County, Middle Park, and the River District fully executed in 2016.
3. Nothing in this Agreement shall create, modify, alter or amend the contractual relationships between Reclamation and Northern Water.

D. Actions by Reclamation.

1. Subject to the provisions of paragraph IV.G.4 of this Agreement, Reclamation will participate in the Shoshone Outage Protocol when either of the following conditions are met:
 - a. The Shoshone Outage occurs between the Start of Fill Date and the End of Fill Season and Reclamation projects with 90% probability that a total of 154,645 AF will be accounted toward the volumes of water calculated in accordance with paragraphs II.A.3.b.i through II.A.3.b.v of the Green Mountain Reservoir Administrative Protocol prior to the Green Mountain Reservoir End of Fill Season, and that Reclamation projects with a 90% probability that after the End of Fill Season any volume of Bypassed Storage Water Owed To Green Mountain Reservoir by the Cities will be available to Reclamation pursuant to the Green Mountain Reservoir Administrative Protocol.or;
 - b. The Shoshone Outage occurs after the End of Fill Season and a total of 154,645 acre feet have been accounted toward the volumes of water identified in paragraphs II.A.3.b.i through II.A.3.b.v of the Green Mountain Reservoir Administrative Protocol and that any Bypassed Storage Water

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Owed to Green Mountain Reservoir by the Cities will be available to Reclamation.

- c. Capitalized terms in paragraphs IV.D.1.a and b have the same meaning as set forth in the Green Mountain Reservoir Administrative Protocol.
2. Green Mountain Releases Under Shoshone Outage Protocol: Reclamation will bypass storable inflow, exercise the Green Mountain Reservoir 1935 Direct Flow Hydropower Right, and/or make releases from previously stored water in its Power Pool as follows:
- a. The daily total reservoir release will be equivalent to the amount that would have been required had the Senior Shoshone Call been in place on that day in the amount of 1,250 cfs during the Non-Winter Season and 900 cfs during the Winter Season, subject to the following conditions:
 - i. The daily total release will not exceed the release that would have been made had the Senior Shoshone Call been in place on that day and all junior water rights had been curtailed or the appropriate amount of replacement or augmentation water made available.
 - ii. In order to prevent any unintended impact to the HUP by this Agreement, during a Shoshone Outage, the Grand Valley Entities will not request any direct delivery of HUP water without first placing a call with the Division 5 Engineer's Office, unless Reclamation and the Grand Valley Entities agree that such a call is not necessary to prevent impacts to the HUP.
 - b. Except as provided in paragraph IV.D.2.c, below, the total volume of storage water released from the Power Pool for Shoshone Outage Protocol purposes from the Start of Fill Date will not exceed the sum of the following:
 - i. 2,000 AFplus;
 - ii. The amount of uncontracted water in the Green Mountain Reservoir Marketing Allocation.plus;
 - iii. The amount of water that would have been released for HUP beneficiary purposes had the Senior Shoshone Call been in place during the Shoshone Outage period.

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- c. Reclamation may, at its own discretion, bypass storable inflow, exercise the Green Mountain Reservoir 1935 Direct Flow Power Right, or release additional water from the Power Pool to assist in meeting the purposes of Shoshone Outage Protocol if it deems that conditions make additional water available.
3. Accounting: The Green Mountain Reservoir releases, bypasses, and power diversions shall be accounted for as follows:
 - a. Bypass of Inflow and Power Diversions: Reclamation will bypass storable inflow or exercise the Green Mountain Reservoir 1935 Direct Flow Hydropower Right to the extent that a bypass of inflow would have been required by a Senior Shoshone Call. The accounting of discretionary power releases and bypassed storable inflow will be consistent with the Green Mountain Reservoir Administrative Protocol.
 - b. Release of Stored Water: All releases of stored water shall be charged to the aggregate Power Pool rather than individual allocations in the Power Pool. However, the HUP allocation will be reduced by the amount of water that was released from Green Mountain Reservoir in accordance with paragraph IV.D.2.b.iii, above.

E. Actions by the Grand Valley Entities and Reclamation.

1. This Section IV.E is an Agreement between the Grand Valley Entities and Reclamation. Other parties are not bound by this Section IV.E.
2. Subject to the provisions of Paragraph IV.E.3, below, the Grand Valley Entities and Reclamation agree, solely for purposes of paragraph 3.b.(3) of the Orchard Mesa Check Case Stipulation and Agreement, that the Shoshone Water Rights continue to be exercised in a manner substantially consistent with their historical operation for hydropower production at their currently decreed point of diversion.
3. Paragraph IV.E.2, above, shall not be effective:
 - a. During any period of time in which any Party is not in compliance with their obligations described in this Agreement; or
 - b. During any period of time in which storage releases or bypasses of water made pursuant to this Agreement are being diverted or exchanged in a manner that results in flow at the Dotsero Gauge that is materially lower than the flow that otherwise would have been produced by the Shoshone Senior Call; or

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- c. If the United States terminates its participation in this Agreement pursuant to Paragraph III.D., above.

F. Actions by DWR.

The DWR shall administer water released, bypassed, or diverted for power purposes pursuant to this Agreement as follows:

1. Reservoir releases from Wolford Mountain Reservoir shall be administered as Shepherded Streamflow Reservoir Releases for in-channel recreation and fishery purposes and, as directed by the River District for subsequent consumptive uses, within the boundaries of the River District pursuant to the decree entered in Case No. 87CW283, Water Division 5. The River District will provide information to the Division Engineer for Water Division 5 to support the intended in-channel recreation and fishery purposes. Bypasses of storable inflow at Wolford Mountain Reservoir will be accounted toward the fill of the Wolford Mountain Reservoir storage decree for the then-current storage season on an instantaneous store and release accounting basis. Any bypasses made pursuant to this Agreement shall not be accounted toward the next fill season's storage volume for Wolford Mountain Reservoir. If a hydroelectric power facility is constructed to use inflow to Wolford Mountain Reservoir, then any diversions used to generate power may be accounted toward the exercise of the direct flow power right decreed in Case No. 87CW283 and will not count toward the fill of the then-current fill season's storage account for Wolford Mountain Reservoir provided the direct flow power right is operated and administered under the same priority as the storage right.
2. Reservoir releases and direct diversions at Williams Fork Reservoir to generate power will be accounted as releases or diversions made for power purposes and will not be accounted toward the decreed storage volume for Williams Fork Reservoir. Bypasses of storable inflow at Williams Fork Reservoir that are not used to generate power will be accounted toward the fill of the Williams Fork Reservoir storage decree for the then-current storage season on an instantaneous store and release accounting basis. Any such bypasses made pursuant to this Agreement shall not be accounted toward the next fill season's storage volume for Williams Fork Reservoir.
3. Reservoir releases, diversions for power purposes, and the bypass of storable inflow from Green Mountain Reservoir without power generation will be accounted for in accordance with the Green Mountain Reservoir Administration Protocol. Releases and the bypass of storable inflow shall be administered as Shepherded Streamflow Reservoir Releases to the Shoshone Power Plant or to and through the 15-Mile Reach as directed by Reclamation.
4. Bypasses of water otherwise divertible by the Windy Gap Project will not count toward the diversion amount for the Windy Gap Project. Releases of Windy Gap Project water from storage will be accounted in accordance with the then current

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Windy Gap Project water right decrees, and subject to paragraph IV.A.7 of this Agreement.

Shepherded Streamflow Reservoir Releases shall be shepherded and protected by DWR under C.R.S. §§ 37-87-102(4) and 37-87-103 or as otherwise provided by law to accomplish the reservoir owners' purposes for making such releases as is consistent with the reservoir owners' legal use of such stored or storable waters. The intent is to continue the historical practice of administering such releases to produce increased flows in the 15-Mile Reach above the flows that would otherwise occur in the 15-Mile Reach, and to accommodate any new releases to be made for such or similar purposes.

G. Notice and Cooperation.

1. Notification to DWR. The Parties will work cooperatively to timely notify DWR, through the Division Engineer for Water Division 5, of operations pursuant to the Shoshone Outage Protocol.
2. The Parties will not divert or exchange any of the water released, diverted for power purposes, or bypassed by any of the Parties pursuant to this Agreement at any location upstream of the current location of the Shoshone Power Plant, or otherwise operate their systems or water rights in a manner that will diminish the benefit to the stream system at any location upstream of the current location of the Shoshone Power Plant of the releases, diversions for power purposes, and bypasses of water made pursuant to this Agreement.
3. Subject to the express conditions and limitations of this Agreement, the Parties will cooperate in good faith to achieve the goals of this Agreement of managing the flow of the Colorado River to maintain the historical flow regime of the Colorado River influenced by the exercise of the Shoshone Senior Right and to mitigate the impacts of any Shoshone Outage. If any party believes that the goals of this Agreement are not being met, including but limited to circumstances where water released or bypassed pursuant to this Agreement during a Shoshone Outage is diverted or exchanged by persons or entities who are not parties to this Agreement at locations upstream of the Dotsero Gauge, then any Party may, in its discretion and in good faith, issue a written notice to the other Parties of such circumstances. Upon such notice, the Parties will meet promptly and work together in good faith to identify such actions as may be necessary to alleviate the conditions that led to the written notice and to implement such actions to which the Parties may agree or any such actions that can be implemented by a subset of the Parties to which that subset may agree.
4. Notwithstanding any provision in this Agreement to the contrary, none of the Parties are obligated by this Agreement to participate in the Shoshone Outage Protocol

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during such periods that a Shoshone call reduction is in effect pursuant to the terms of the 2007 Shoshone Agreement (copy attached for reference).

V. SEVERABILITY AND REFORM

Wherever possible each provision of this Agreement shall be interpreted and implemented in such manner as to be effective and valid under applicable law. If any provision or portion of this Agreement is determined to be invalid or unenforceable, the remaining provisions shall remain in full force and effect unless the remaining provision's effectiveness is explicitly dependent upon the invalid or unenforceable provision. The Parties agree to reform this Agreement to replace any such invalid or unenforceable provision with a valid and enforceable provision that comes as close as possible to the intention of the stricken provision. The provisions of this Agreement shall be reasonably and liberally construed to achieve the intent of the Parties.

VI. COMPENSATION

Consideration for the actions pursuant to this Agreement is in providing greater certainty in the administration of water rights, and in the resolution among some of the Parties of certain unresolved issues. There will be no charge for water released under this agreement.

VII. GREEN MOUNTAIN RESERVOIR

Subject only to the express exceptions provided herein, the Parties agree not to challenge Reclamation's operation of Green Mountain Reservoir under this Agreement as inconsistent with Senate Document 80 or the Green Mountain Reservoir Operating Policy. The Parties will work in good faith to address any conflicts that may arise between the operations contemplated by this Agreement and the Green Mountain Reservoir Administrative Protocol. Any conflict that may arise shall be resolved in a manner that is consistent with Senate Document 80, the Blue River Decree, the Green Mountain Reservoir Operating Policy, and the Green Mountain Reservoir Administrative Protocol.

VIII. COLORADO RIVER COOPERATIVE AGREEMENT

Nothing in this Agreement shall be interpreted to constitute compliance with, or satisfaction of, the obligations of Article VI.C of the Colorado River Cooperative Agreement between Denver Water and seventeen West Slope entities.

IX. NO WAIVER

The Parties agree that nothing contained in this Agreement including, but not limited to, any Party's forbearance in the exercise of any Party's right to divert, store, and beneficially use water pursuant to its decrees, is intended nor shall it be construed to give rise to any claim, defense, or theory of acquiescence, bar, merger, issue or claim preclusion, promissory estoppel, equitable estoppel, waiver, laches, unclean hands or any other similar position or defense concerning the operation of such Parties' water rights.

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The Parties agree that except as expressly provided herein, this Agreement shall never give rise to any claim, defense, or theory of acquiescence, bar, merger, issue or claim preclusion, promissory estoppel, equitable estoppel, waiver, laches, unclean hands or any other similar position or defense concerning any factual or legal position regarding the Parties respective positions regarding the operation of the Colorado-Big Thompson Project. The Parties further agree that they do not intend this Agreement to have the effect of precedent or preclusion on any factual or legal issue in any other matter. The Parties expressly reserve their rights to assert any legal or factual position or challenge the legal or factual position taken by any other Party or third-party on any other matter.

X. REGULATION AND DISTRIBUTION OF WATER

Nothing in this Agreement abridges the obligations of the DWR established by Section 37-92-304(8), Colorado Revised Statutes (2011), or other applicable law.

XI. PRIOR VERSIONS.

This Agreement replaces and supersedes the 2013 Shoshone Outage Protocol Agreement that was executed by some, but not all, of the Parties to this Agreement.

AGREEMENT NUMBER 13XX6C0129

XII. SIGNATURES of PARTIES

UNITED STATES DEPARTMENT OF THE INTERIOR

By:

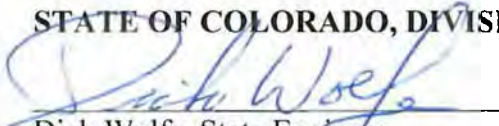


Michael J. Ryan, Regional Director
Great Plains Regional Office
Bureau of Reclamation
P.O. Box 36900
Billings, MT 59107-6900
(406) 247-7600

AGREEMENT NUMBER 13XX6C0129

STATE OF COLORADO, DIVISION OF WATER RESOURCES

By:

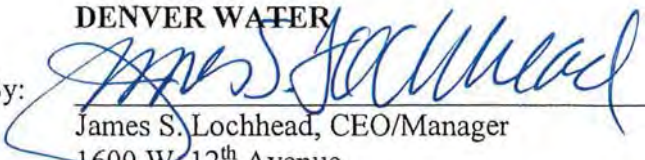
 7-12-16

Dick Wolfe, State Engineer
1313 Sherman Street, Suite 821
Denver, CO 80203
(303) 866-3581

AGREEMENT NUMBER 13XX6C0129

DENVER WATER

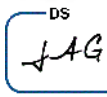
By:


James S. Lochhead, CEO/Manager
1600 W. 12th Avenue
Denver, CO 80204-3412
(303) 628-6000

APPROVED AS TO FORM

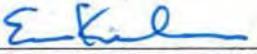

LEGAL DIVISION

**REGISTERED AND COUNTERSIGNED:
CITY AND COUNTY OF DENVER**

By:  
Timothy M. O'Brien, CPA
Auditor

AGREEMENT NUMBER 13XX6C0129

COLORADO RIVER WATER CONSERVATION DISTRICT

By: 
Eric Kuhn, General Manager
P.O. Box 1120
Glenwood Springs, CO 81602
(970) 945-8522

AGREEMENT NUMBER 13XX6C0129

MIDDLE PARK WATER CONSERVANCY DISTRICT

By: Duane Scholl
Duane Scholl, President
P.O. Box 145
Granby, CO 80446
(970) 887-3376

AGREEMENT NUMBER 13XX6C0129

NORTHERN COLORADO WATER CONSERVANCY DISTRICT

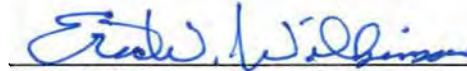
By:



Eric Wilkinson, General Manager
220 Water Avenue
Berthoud, CO 80513
(800) 369-7246

**MUNICIPAL SUBDISTRICT,
NORTHERN COLORADO WATER CONSERVANCY DISTRICT**

By:




Eric Wilkinson, General Manager
220 Water Avenue
Berthoud, CO 80513
(800) 369-7246

AGREEMENT NUMBER 13XX6C0129

GRAND VALLEY WATER USERS ASSOCIATION

By:


Mark Harris, Manager
1147 24 Road
Grand Junction, CO 81505-9639
(970) 242-5065

AGREEMENT NUMBER 13XX6C0129

ORCHARD MESA IRRIGATION DISTRICT

By:



Max Schmidt, Manager

668 38 Road

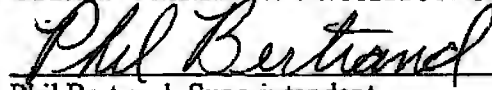
Palisade, CO 81526

(970) 464-7885

AGREEMENT NUMBER 13XX6C0129

GRAND VALLEY IRRIGATION COMPANY

By:



Phil Bertrand, Superintendent

668 26 Road

Grand Junction, CO 81506

(970) 242-2762

2007 SHOSHONE AGREEMENT
(as referenced in
Agreement Number 13XX6C0129)

Please reference the following
number on all billings or payments.
Contract # 10766A

**AGREEMENT CONCERNING
REDUCTION OF SHOSHONE CALL**

This Agreement is between the City and County of Denver, acting by and through its Board of Water Commissioners (Board), and Public Service Company of Colorado d/b/a Xcel Energy (Company).

Recital

The Board's ability to store water in its reservoirs for beneficial use by its customers is adversely impacted, especially in dry years, by the Company's Shoshone Call. Following the drought year of 2002, a brief relaxation of the Shoshone Call during the spring of 2003 provided some benefit to storage reservoirs operated by both west slope and east slope entities, including the Board. Although a more comprehensive and long-term agreement on relaxation achieved through multi-party negotiations may be desirable, the Company and the Board agree to a relaxation of the Call under the provisions in this Agreement. The Company agrees to participate in developing a long-term program of relaxation, including a relaxation of the junior Shoshone Call, with the Board, other water users on the Colorado River and appropriate west slope entities.

Agreement

1. Agreement to Relax Call. When a water shortage occurs, as defined in Paragraph 2, the Company agrees to reduce the Shoshone Call to a one-turbine call of 704 cfs. If the Call is relaxed and the flow of the Colorado River at the Shoshone Power Plant, together with flows contributed by intervening tributaries, is not sufficient to meet the then-current demand of the major Grand Valley water rights, up to 1950 cfs (commonly referred to as the "Cameo Call"), then the level of the Shoshone Call will be adjusted to an amount greater than 704 cfs so as to avoid the initiation of a Cameo Call.

2. Water Shortage Defined. For purposes of this Agreement, a water shortage occurs when the following two conditions are met:

- a. Using its regular methodology and based on the "normal" scenario, the Board predicts that reservoir storage in its system on July 1 will be at or below 80% full; and
- b. The Most Probable forecast of streamflow prepared by the Natural Resources Conservation Service (NCRS) or jointly by NCRS and the Colorado Basin River Forecast Center indicates that the April – July flow of the Colorado River at the Kremmling gage will be less than or equal to 85% of average. If no forecast for the Kremmling gage is available, then the Dotsero gage will be used.

3. Timing of Relaxation of Call. If the two forecasts described in paragraph 2 occur in March, then the call will be relaxed beginning March 14 until May 20, inclusive, in accordance with this Agreement. If the two conditions described in paragraph 2 occur in April or May forecasts, then the Call will be relaxed in accordance with this Agreement until May 20, inclusive. The methodology that the Board uses to predict system storage shall be substantially the same as that described in the attached Exhibit A.

4. Power Interference. The Board agrees to pay power interference to compensate the Company for its incremental cost of replacement power and energy as a result of relaxing the Shoshone Call, regardless of which entity ultimately stores the water not called. The procedure for determining power interference is shown in Exhibit B.

5. Potential for Longer Call Relaxation. The Company agrees to consider a longer period of relaxation when water supplies are more severely impacted than described in paragraph 1, if such longer period is defined cooperatively between the Board, the Company and appropriate west slope entities.

6. Water for the Company's Facilities. The Board agrees to deliver water as described in this paragraph to the Company's Cherokee, Arapahoe, or Zuni Power Plants or a future Company power plant located within the Board's Combined Service Area. The Company will select the plant or plants to which the water will be delivered. Deliveries to the Arapahoe, Zuni or a future plant will be made to the South Platte River. Deliveries to the Cherokee plant will be made, at the Board's choice, to the South Platte River or through the Board's Recycled Water Plant. The Board may choose in its discretion the type of water delivered to these facilities, so long as the water is suitable for their use. The Board will not deliver water under this paragraph to the South Platte River downstream of the Cherokee plant's diversion structures. Any water delivered by the Board to the Company under this paragraph shall be used by the Company only at the plants listed in this paragraph 6 and only for purposes for which the Board's water rights have been decreed.

6.1 Amount of Water. The Board shall deliver under this paragraph 6 an amount of water equivalent to 15% of the "net water" it is able to store or divert as a direct result of the reduction of the Shoshone Call. "Net water" is defined as the total amount of water the Board is able to store or divert as a direct result of the reduction of the Shoshone Call at the following facilities, less any deductions described below:

- a. Water stored or diverted at the Board's Dillon Reservoir, less any water spilled from Dillon after filling and any water bypassed from Dillon for flood management purposes; and

- b. Water stored or diverted at the Board's Williams Fork Reservoir, less any water spilled from Williams Fork after filling and any water bypassed from Williams Fork for flood management purposes; and
- c. Water stored in the Board's account in Wolford Reservoir, less any water spilled from the Board's account after filling; and
- d. Water diverted through the Board's Moffat Tunnel, less any water spilled from the Fraser Collection System in excess of the Forest Service minimum bypass flow requirements; and
- e. Water stored or diverted at any western slope reservoir or storage account acquired or constructed by the Board after the date of this agreement, less any water spilled after filling and any water bypassed for flood management purposes.

6.2 Schedule for 15% Water Delivery. The Board shall make deliveries under this paragraph 6 between June 1 in the same calendar year as the Shoshone Call is reduced and March 31 of the following calendar year. The delivery schedule will be subject to approval by the Company.

6.3 Cost of Water Delivered. For each acre foot of water delivered to the Company under this paragraph 6, the Company shall reimburse the Board for the Board's power interference payments at the same rate per acre foot as the Board paid to the Company under paragraph 4.

7. Water for West Slope Entities. The Board agrees to make available to entities on the west slope, at no charge to the recipients, an amount of water equivalent to 10% of the "net water" it is able to store or divert as a direct result of the reduction of the Shoshone Call. "Net water" is defined in paragraph 6.1. The Board may choose in its discretion the method of delivery that is consistent with its water right decrees, so long as the delivery method is suitable for each recipient's desired use. The Board shall deliver the water in the same calendar year as the Shoshone Call is reduced. The Board agrees to cooperate with the Colorado River Water Conservation District to determine the particular west slope entities and the proportionate share of the water to be made available to each entity.

8. Additional East Slope Participants. The Board and the Company agree to make a good faith effort to secure commitments from the Municipal Subdistrict of the Northern Colorado Water Conservancy District, the City of Aurora and Colorado Springs Utilities to deliver to the Company, at no charge, 15% of their additional water diversions that result from a relaxation of the Shoshone Call, in accordance with paragraph 6, and to deliver 10% of the water diverted or stored to west slope entities in accordance with paragraph 7.

9. Priority System. Water made available by the relaxation of the Shoshone Call will be allocated in accordance with the priority system.

10. No Warranties. The Company is not warranting or representing that the diversion and use by the Board of additional water as a result of the relaxation of the Shoshone Call is administrable or lawful. To the extent that the State Engineer or a court with jurisdiction determines that the diversion and use by the Board of additional water as a result of the relaxation of the Shoshone Call is not administrable or lawful, the Company can continue to place the Shoshone Call notwithstanding this Agreement.

11. Increased Call for Company Operations. If the Company in its sole discretion determines that additional river flow is required for safe operation of the Shoshone Hydroelectric Station or the Company's electrical system, then the Company may increase the Call, notwithstanding this Agreement.

12. Operational Meeting. The Company agrees to meet with the Board each October to discuss operation of the Shoshone Call and any planned outages of the Shoshone Plant for repair or maintenance during the following twelve months so that the parties may better coordinate their activities.

13. Sale of Shoshone Water Rights. In the event the Company should determine that it is in its best interest to sell the Shoshone water rights, it agrees to do so only on an open bidding basis in which the Board shall have an equal opportunity to purchase the water rights as all others. If the Company sells the Shoshone water rights to an entity other than the Board, the new owner shall have the right to terminate this Agreement two years after closing of the sale.

14. Term. This Agreement shall be effective as of January 1, 2007 and will terminate on February 28, 2032.

15. Prior Agreement. The previous Letter Agreement between the Company and the Board dated April 14, 1986, is hereby terminated in its entirety.

IN WITNESS WHEREOF, the Board and the Company have executed this Agreement.

ATTEST:

PUBLIC SERVICE COMPANY OF
COLORADO d/b/a XCEL ENERGY

Carol J. Peterson
asst. Secretary

By: *Paul V. [Signature]*
President and CEO
Public Service Company of Colorado

Reviewed
Legal

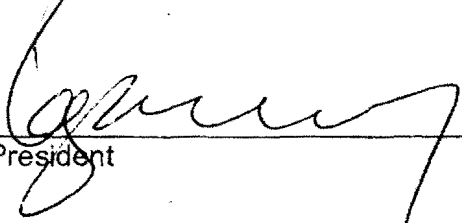
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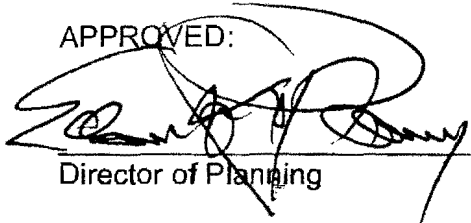
CITY AND COUNTY OF DENVER,
acting by and through its
BOARD OF WATER COMMISSIONERS

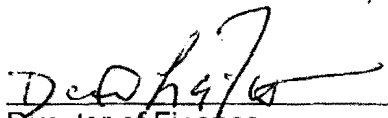
ATTEST:


Secretary

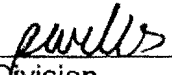

President

APPROVED:


Director of Planning


Director of Finance

APPROVED AS TO FORM:


Legal Division

REGISTERED AND COUNTERSIGNED
Dennis J. Gallagher, Auditor

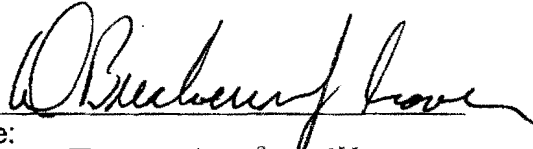
By: 
Title: Deputy Auditor

Exhibit A

DESCRIPTION OF PROCEDURES USED BY THE BOARD FOR RESERVOIR PROJECTIONS

Denver Water projects future reservoir levels monthly in the springtime and less frequently throughout the rest of the year. Active storage levels (excluding the dead storage pools) for the 10 largest reservoirs in Denver's system (Antero, Eleven Mile, Cheesman, Marston, Chatfield, Gross, Ralston, Dillon, Williams Fork, and Wolford Mountain) are forecasted. Calculations of gross and net aggregate reservoir contents are made. The calculation of net reservoir contents excludes any water in Denver's system owed to others (primarily Green Mountain Reservoir). The net active storage of the 10 reservoirs will be used in the forecast for the Shoshone call reduction.

The reservoir projections are based on natural streamflow forecasts produced primarily by the Natural Resources Conservation Service (NRCS). However, streamflow forecasts produced by other organizations including the Colorado Basin River Forecast Center, the Bureau of Reclamation, the Northern Colorado Water Conservancy District and Denver Water are also used.

The reservoir projections utilize correlations between natural streamflow and divertible streamflow to estimate how much of the natural streamflow can be diverted under Denver's water rights. Other factors incorporated in the reservoir projections include projections of treated water use, raw water deliveries, evaporation (based on rates approved by the State Engineer's Office), minimum bypass and release requirements, carriage losses assessed by the State Engineer's Office, existing capacities of diversion and conveyance facilities, system outages and river calls. The assumed treated water use considers any water use restrictions approved by the Denver Water Board at the time of the forecast.

Usually, three levels of reservoir projections are produced. These projections are based on three scenarios after the forecast date: "dry", "normal" and "wet" conditions. The "dry" scenario is based on the "reasonable minimum" streamflow forecasts, which have a 90% chance of being exceeded. The "normal" scenario is based on the "most probable" streamflow forecasts, which have a 50% chance of being exceeded. The "wet" scenario is based on the "reasonable maximum" streamflow forecasts, which have a 10% chance of being exceeded. The "normal" scenario will be used for the Shoshone call reduction.

Exhibit B

COMPENSATION FOR POWER INTERFERENCE

The Board agrees to pay power interference to compensate the Company for its incremental cost of replacement power and energy as a result of relaxing the Shoshone Call. The procedure for determining power interference is shown below.

Depletions to Shoshone Power Plant

The Board will compensate the Company for each acre-foot of net turbine flow depletion caused to the Shoshone Power Plant through the relaxation of the Shoshone Call. Net depletions are defined as gross depletions caused by the Board and all other water users upstream of the Shoshone power plant, less any water subsequently released from Green Mountain and Wolford Reservoirs utilized to generate power at the Shoshone plant. Some of the water stored in Green Mountain and Wolford as a result of relaxation of the Call will later be released, run through the Shoshone Plant for power generation, and delivered for use below the plant; such amounts of water do not constitute a net depletion for purposes of calculating power interference. Similarly, amounts of water spilled from Dillon Reservoir, Williams Fork Reservoir, the Board's account in Wolford Reservoir, or a new west slope reservoir or storage account described in Paragraph 6.1(e), and run through the Shoshone Plant for power generation, do not constitute a net depletion for purposes of calculating power interference. Depletions will be calculated at the Shoshone plant and will be adjusted for stream carriage losses assessed by the State Engineer in water rights administration.

Reimbursement to Xcel

The Board will reimburse the Company for power interference at the rate of at least \$5.00 per acre-foot of the net depletion described above. The \$5.00 per acre-foot minimum will be adjusted on a monthly basis (but not below \$5.00 per acre-foot) by the change in the Price of Spot Gas Delivered to Pipelines for Colorado Interstate Gas, Rocky Mountain (Index) as published in "Platts Inside FERC Gas Market Report," compared to a baseline representing the average Index for the first three months of 2006.

Accounting and Payment.

After the Call relaxation has ended, the Board will prepare an accounting of the power interference and provide it to the Company for review. Once final accounting as been determined, the Board will make payment to the Company within 60 days. Upon mutual agreement and the development of mutually agreeable terms, the Board may substitute a delivery of energy to the Company for the payment of power interference.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 25486-DFC
Denver, Colorado 80225



In Reply Refer to:
FWS/R6/CRRP

Bureau of Reclamation
Attn: Acquisition Management Division
Wallace F. Bennett Federal Building
125 South State Street
Salt Lake City, UT 84138-1102

Date: October 30, 2024

Re: Shoshone Permanency Project

To Whom It May Concern:

The threatened and endangered species managed by the Upper Colorado River Endangered Fish Recovery Program (Recovery Program) can benefit from multiple opportunities submitted to the Bureau of Reclamation's Upper Basin Environmental Drought Mitigation funding opportunity. The work of the Recovery Program and partners is essential to supporting the recovery efforts of the four fish species in the Colorado River basin listed as threatened and endangered under the Endangered Species Act (ESA): Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), bonytail (*Gila elegans*) and humpback chub (*Gila cypha*). In recent years, persistent drought has increased pressures on the Colorado River ecosystem, increasing temperatures, affecting hydrology, and presenting new challenges.

The Recovery Program provides ESA compliance for over 2200 federal, non-federal, and tribal water projects in the upper Colorado River basin. The program is widely supported by water users, federal and state governmental agencies, environmental groups, and tribal nations. The Recovery Program has long demonstrated an ability to collaborate effectively amongst a diverse group of interests and successfully implement basinwide projects that have contributed to the recovery of these native species.

The Recovery Program conducts recovery actions across the Green and Colorado river basins, including large tributary systems like the White, Yampa, Duchesne, Gunnison, and Dolores rivers. Areas of emphasis include instream flows, habitat management, nonnative fish management, propagation and augmentation of populations, outreach and education, and research and monitoring. Projects in these areas that focus on recovery actions, water

management, or construction of in-river or off channel habitat for the ESA listed species could assist the Recovery Program in meeting its goals in recovering the species. We submit this letter of support for projects that have expressed direct ties to these four threatened or endangered species, emphasizing the importance of the upper Colorado River basin to the recovery of these species.

Thank you for your consideration of applications with benefits to these species.

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Stahl". The signature is fluid and cursive, with the first name "Julie" and last name "Stahl" clearly distinguishable.

Julie Stahl
Director, Upper Colorado River Endangered Fish Recovery Program

WATER DELIVERY AND STREAM FLOW IMPROVEMENT AGREEMENT

The Colorado Water Conservation Board ("CWCB"), an agency of the State of Colorado, the City and County of Denver, acting by and through its Board of Water Commissioners ("Denver Water"), a Colorado municipal corporation, and Grand County, Colorado, a body politic and corporate ("Grand County") (collectively, the "parties") in consideration of the mutual promises contained in this document, agree as follows:

RECITALS

A. The Upper Colorado River system and the Fraser and Williams Fork Rivers serve as critical municipal, agricultural, recreational, and industrial water sources for the state as a whole and provide important aquatic habitat.

B. Denver Water and numerous water users on the West Slope of Colorado have negotiated the proposed Colorado River Cooperative Agreement, dated April 28, 2011 ("CRCA"), to resolve longstanding disputes over water. As part of the CRCA, Grand County, Denver Water, the Middle Park Water Conservancy District ("Middle Park") and the Colorado River Water Conservation District ("River District") have agreed to a proposed Intergovernmental Agreement for the Learning by Doing Cooperative Effort, dated August 27, 2010 that provides for the parties to engage in a cooperative, iterative and on-going process ("Cooperative Effort") to maintain, and when reasonably possible, restore or enhance the stream environment in the Fraser and Williams Fork River Basins and in the mainstem of the Colorado River from the outflow of Windy Gap Reservoir to its confluence with the Blue River (the "Cooperative Effort Area"). A copy of the proposed Cooperative Effort is attached hereto as Attachment B.

C. Under Article III.E of the CRCA, Denver Water has agreed to several measures designed to improve current stream conditions, including but not limited to providing water to protect and enhance stream flows in Grand County. The signatories to the CRCA have agreed to cooperate to implement such legal mechanisms and to obtain such administrative and judicial approvals as Denver Water, Grand County, the River District, and Middle Park agree are necessary to ensure that the water provided by Denver Water under Article III.E of the CRCA will be physically and legally available for the intended purposes of protecting and enhancing stream flows in the Fraser, Williams Fork, and Colorado Rivers and their tributaries. Those sources of water include, 1,000 acre feet to be provided from the Fraser Collection System ("Fraser 1,000 af") as described in and subject to Article III.E.10, and up to 1,000 acre-feet of water to be provided from Williams Fork Reservoir ("Williams Fork 1000 af") with the ability to carryover up to 2,500 acre feet in Williams Fork Reservoir as described in and subject to Article III.E.11.

D. Under the provisions of and subject to Article III.E.20 of the CRCA, upon issuance and acceptance by Denver Water of permits necessary for the Moffat Project, Denver Water has agreed to make an additional 375 acre feet of water available annually to certain Grand County Water Users ("Grand County Water Users 375 af"), to be

Water Delivery And Stream Flow Improvement Agreement

managed in accordance with the Amended Grand County Water Users Operating Plan, contingent upon provision to Denver Water of replacement water, as defined in Article III.A.4 of the CRCA, in the ratios described in Article III.E.20, and subject to a separate agreement among the Grand County Water Users and the CWCB. From time to time, to the extent such water is not needed by these Grand County Water Users for the uses described in their decrees, they may elect to have Denver Water provide such water from Denver Water's existing facilities in coordination with the Cooperative Effort, at times, in locations and in the amounts requested by Grand County for environmental purposes in the same manner and under the same procedures as the Fraser 1,000 af, contingent upon provision to Denver Water of replacement water, as defined in Article III.A.4 of the CRCA, in the ratios described in Article III.E.20.

E. Pursuant to section 37-92-102(3), C.R.S. (2010), the CWCB may acquire by contractual agreement with any governmental entity such water, water rights or interests in water that are not on the division engineer's abandonment list in such amount as the CWCB determines is appropriate for stream flows to preserve or improve the natural environment to a reasonable degree. Pursuant to Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR 408-2, on November 15, 2011, the CWCB found that Denver Water's deliveries of water under this Agreement of the volumes of water provided to Grand County under Article III.E of the CRCA to the stream reaches identified in Attachment A are appropriate for stream flows to preserve or improve the natural environment in these stream reaches to a reasonable degree, to the extent such deliveries contribute water toward the flow rates and duration of flows identified in Attachment A.

F. Denver Water, Grand County and the CWCB desire to work cooperatively to implement such legal mechanisms and to obtain such court decrees and approvals as are necessary to ensure that the water provided by Denver Water to Grand County will be legally and physically available for the intended purposes of protecting and enhancing stream flows in the Fraser, Williams Fork, and Colorado Rivers and their tributaries and to protect such water so that it reaches and flows through the identified stream reaches where the intended beneficial uses will occur and is not diverted directly or by exchange by intervening structures within Grand County.

NOW, THEREFORE, Denver Water, Grand County and the CWCB agree as follows:

1. This Agreement contemplates and is conditioned upon the successful and complete execution of the CRCA. This Agreement shall be of no force or effect until the CRCA is so executed.

2. The parties shall file and diligently pursue water court applications or other legal proceedings as necessary to obtain final, unappealable judicial decisions or decrees confirming that the water provided to Grand County under Article II.E is physically and legally available to meet the intended purposes of Article III.E. In any such water court application for adjudication of new water rights, Denver Water shall be

Water Delivery And Stream Flow Improvement Agreement

the applicant. Grand County and the CWCB shall be co-applicants for the purposes of advancing and protecting their contractual rights under this Agreement, including CWCB's obtaining a decreed right to use the water delivered by Denver Water under this Agreement to preserve and improve the natural environment to a reasonable degree on the stream reaches specified in Attachment A. In any such water court adjudications, Denver Water may propose the use of any of its Fraser River Diversion Project, Williams Fork Diversion Project or Moffat Tunnel Collection System structures to accomplish the purposes of this Agreement and Article III.E of the CRCA. In the absence of any subsequent agreement to the contrary, the parties shall each bear their own attorneys fees and costs related to their own participation in the Water Court adjudications contemplated under this paragraph 2.

3. The parties intend that judicial decisions or decrees described in paragraph 2 above confirm that the water to be provided to Grand County under Article III.E of the CRCA will be delivered by Denver Water under the terms of this Agreement for use or reuse by the CWCB: (1) to preserve the environment to a reasonable degree by maintaining flows in those stream reaches identified in Attachment A where the CWCB has instream flow rights, when the CWCB's instream flow rights on these reaches are not satisfied; (2) to improve the natural environment to a reasonable degree by increasing flows in the stream reaches above the CWCB's decreed flows in amounts up to the flows set forth in Attachment A; and (3) to preserve or improve the natural environment to a reasonable degree by increasing flows in the reaches listed in Attachment A where the CWCB does not have decreed instream flow rights, up to the flows set forth in Attachment A.

4. It is a material provision of this Agreement that such judicial decisions or decrees described in paragraph 2 above confirm that the water delivered under this Agreement is protected and shepherded by the State and Division Engineers to and through the stream reaches where the intended beneficial uses will occur with the goal of achieving the flow rates and duration of flows identified in Attachment A, without diversion or exchange by intervening water users in such reaches.

5. Grand County may enter contracts for reuse or successive use of the same water for delivery to stream reaches downstream of Grand County, via storage, directly or by exchange for subsequent release for instream flow, power release, or other West Slope purposes after its initial beneficial use under paragraph 3 of this Agreement. Any such reuse or successive use may not adversely affect in any way the intended benefits to Grand County under this Agreement and the CRCA without the prior written consent of Grand County.

6. The parties shall cooperate in the administration and monitoring of the water delivered under this Agreement and its intended beneficial uses in a manner consistent with the Cooperative Effort. Denver Water shall deliver legally and physically available water under this Agreement at times, in locations and in the amounts requested by Grand County as part of the Cooperative Effort and inform the CWCB of any such requests or changes in such requests. The intended operations under this Agreement

Water Delivery And Stream Flow Improvement Agreement

may, at times, require daily communication and monitoring by Grand County with Denver Water, the Grand County Water Users the Water Commissioner or the Division Engineer, as part of the Cooperative Effort. Each of the parties to this Agreement shall immediately report to the other parties any controversy or problem with the delivery or administration of water as contemplated by this Agreement.

7. Deliveries of the Fraser 1,000 af and the Grand County Water Users 375 af under this Agreement shall be measured at appropriate points of measurement from Denver Water's Collection System and shall be converted to acre feet with the standard factor, i.e., 1 cfs for 24 hours = 1.9835 af. The Williams Fork 1,000 af shall be measured at the gage immediately below Williams Fork Reservoir and converted to acre feet with the same standard factor above.

8. Pursuant to Article III.E.1.c of the CRCA, Denver Water will not be responsible for the costs of any new infrastructure required to deliver or make the water under this Agreement available to the various stream reaches. In the event Denver Water, the CWCB or Grand County determines any new infrastructure or stream gaging stations are either necessary or desirable for the implementation of this Agreement, they may pursue such infrastructure or stream gaging stations at their own expense. However, the parties agree to work cooperatively in good faith to accommodate the installation of any such infrastructure or stream gaging stations in an efficient and economical manner. Denver Water agrees to operate any such new infrastructure located on its facilities as necessary to deliver water as requested by Grand County under this Agreement. Grand County and the CWCB, in consultation with the Division Engineer, may install any measuring device(s) necessary: (1) to administer the delivered water; (2) to measure and record how much water flows out of the reaches after use by the CWCB under this Agreement; and (3) to meet any other applicable statutory requirements.

9. Any rights created by this Agreement are contractual rights. This Agreement does not create and shall not be construed to create or convey any property interest, including any covenant, easement or servitude, in the real property or water rights of any party.

10. This Agreement does not alter and shall not be construed to alter any rights or obligations of the parties under the CRCA or any other pre-existing agreement.

11. Use of the water provided to Grand County by Denver Water pursuant to Article III.E of the CRCA shall be coordinated through the Cooperative Effort. If the Management Committee of the Cooperative Effort cannot reach consensus on such use, then Grand County shall manage and control the water to accomplish the purposes of the CRCA and this Agreement. Denver Water and Grand County agree to make their best efforts to secure a seat for the CWCB on the Advisory Committee for the Cooperative Effort.

Water Delivery And Stream Flow Improvement Agreement

12. The term of this Agreement is perpetual unless terminated under the provisions of this paragraph. This Agreement shall not be assignable by any party without the written consent of all of the other parties. This Agreement may only be amended or terminated by the written agreement of the parties, and any such termination or amendment shall take effect only when properly signed by all of the parties to this Agreement.

13. Pursuant to section 37-92-102(3), C.R.S. (2010), the terms of this Agreement shall be enforceable by each party as a water matter in the District Court for Water Division 5; provided, however, that before commencing any action for enforcement of this Agreement, the party alleging violation shall notify the other parties in writing of the alleged violation and the parties shall make a good faith effort to resolve their differences through informal consultation. All rights of enforcement shall be strictly reserved to the parties, and no third party shall have any right to enforce this Agreement. Specific performance of this Agreement shall be the exclusive remedy for failure of any party to comply with any provision of this Agreement. This Agreement shall be construed in accordance with the laws of the State of Colorado and shall be interpreted broadly to effect its purposes. Should any conflict appear to exist between this Agreement and the CRCA, the Amended Grand Water Users County Operating Plan or the Cooperative Effort, the Agreement should be construed in a manner consistent with the CRCA, the Amended Grand County Water Users Operating Plan, or the Cooperative Effort as the case may be and as such agreements exist at the time this Agreement becomes effective.

14. Any failure or delay by a party in exercising any of its rights, powers and remedies hereunder or in accordance with laws shall not lead to a waiver of such rights, and the waiver of any single or partial exercise of a party's rights shall not preclude such party from exercising such rights in any other way and exercising the remaining part of the party's rights.

15. Each provision contained herein shall be severable and independent from each of the other provisions such that if at any time any one or more provisions herein are found to be invalid, illegal, or unenforceable, the validity, legality, or enforceability of the remaining provisions herein shall not be affected as a result thereof.

16. Any notice required or permitted to be given under this Agreement will be in writing and considered effective when delivered by fax, email, hand delivery, Express Mail, Federal Express, or similar service, or on the third mail-delivery day after being deposited in the United States mail, postage prepaid, addressed to the parties as follows:

Denver Water: City and County of Denver acting by and through its Board of
Water Commissioners ("Denver Water")
1600 West 12th Avenue
Denver Colorado 80204-3412

Water Delivery And Stream Flow Improvement Agreement

CWCB: Stream and Lake Protection Section,
1313 Sherman Street, Room 721
Denver, CO 80203

Grand County: County Manager, 308 Byers Ave., P.O. Box 264
Hot Sulphur Springs, CO 80451

17. The effective date of this Agreement shall be the later of the Effective Date of the CRCA, as defined therein, or the last date shown on the signature page of this Agreement, which may be executed in counterparts.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.


COLORADO WATER CONSERVATION BOARD


By: Jennifer Gimbel, Director

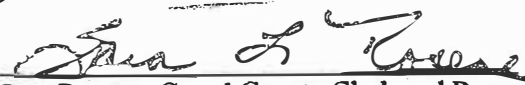
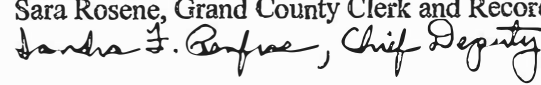
Date: Nov 23, 2011

Water Delivery And Stream Flow Improvement Agreement

GRAND COUNTY BOARD OF COUNTY COMMISSIONERS


By: Gary Bumgarner, Chairman

Date: ~~NOV 22 2011~~

ATTEST: 
Sara Rosene, Grand County Clerk and Recorder
, Chief Deputy

Water Delivery And Stream Flow Improvement Agreement

CITY AND COUNTY OF DENVER,
Acting by and through its **BOARD OF WATER COMMISSIONERS**

By: [Signature]
President

Date: November 23, 2011

ATTEST: [Signature]
Secretary



APPROVED:

By: [Signature]
Director of Planning

APPROVED AS TO FORM:

By: Casey S Funk
Legal Division

WATER DELIVERY AGREEMENT

The Colorado Water Conservation Board (“CWCB”) an agency of the State of Colorado, and the City of Boulder (“Boulder”), a home rule municipal corporation of the State of Colorado, in consideration of the mutual promises contained herein, agree as follows:

RECITALS

- A. CWCB is an agency of the State of Colorado created to aid in the protection and development of the waters of the state for the benefit of the present and future inhabitants of the state. In 1973, the General Assembly vested the CWCB with the exclusive authority to appropriate waters of natural streams for minimum stream flows between specific points on a stream to preserve the natural environment to a reasonable degree.
- B. Pursuant to section 37-92-102(3), C.R.S. (2018), the CWCB may acquire by contractual agreement with any person, including any governmental entity, such water, water rights, or interests in water that are not on the Division Engineer’s abandonment list in such amount as the CWCB determines is appropriate for stream flows to preserve or improve the natural environment to a reasonable degree. This Agreement provides for the CWCB’s contractual acquisition of water or an interest in water yielded from certain water rights to be delivered as specified below to preserve the natural environment to a reasonable degree in a specified stream reach.
- C. On February 24, 2010, Boulder, the City of Lafayette (“Lafayette”), and the City and County of Denver (“Denver”) entered into the “Intergovernmental Agreement Between the City and County of Denver, The City of Boulder, and the City of Lafayette For An Environmental Pool in Gross Reservoir” (“Denver IGA”). In the Denver IGA, Denver granted Boulder and Lafayette the right to store up to 5,000 acre-feet of their decreed water rights in the Environmental Pool of enlarged Gross Reservoir. The Denver IGA also states the parties’ agreement and understanding that Boulder and Lafayette anticipate seeking decrees for new exchanges, changes of water rights, and/or a new storage right for the purposes of filling the Environmental Pool.
- D. On February 17, 2010, Boulder and Lafayette entered into the “Intergovernmental Agreement Between the City of Lafayette and the City of Boulder Regarding the Operation of the Environmental Pool in Gross Reservoir” (“Lafayette–Boulder IGA”). The Lafayette–Boulder IGA contains details about the parties’ storage of water in the Environmental Pool and sets out the targeted flows, “IGA Targeted Flows” in South Boulder Creek between the enlarged Gross Reservoir and the confluence of South Boulder Creek and Boulder Creek, approximately 17 miles, (“Subject Reach”) that the parties seek to meet by releases of water from the Environmental Pool. The Subject Reach is generally depicted in the map attached hereto as **Exhibit A**. The Denver IGA and the Lafayette–Boulder IGA are collectively referred to herein as the “Gross Reservoir IGAs.”

- E. In Case No. 16CW3160, Water Division No. 1, Boulder filed for, among other things, adjudication of a conditional water storage right for proposed ponds known as Wittemyer Ponds that will divert water from Boulder Creek, as well as conditional rights of substitution and exchange that will, among other things, allow Boulder to deliver fully consumable water supplies to downstream appropriators on Boulder Creek, and to divert an equivalent amount of water at, among other locations, the Environmental Pool of enlarged Gross Reservoir. Boulder claimed instream flow uses to be made by the CWCBC of water attributable to the conditional water storage right that is diverted by substitution or exchange into the Gross Reservoir Environmental Pool and subsequently released to South Boulder Creek, up to the IGA Targeted Flows within the Subject Reach identified in the Gross Reservoir IGAs.
- F. In Case No. 17CW3212, Water Division No. 1, Boulder, with Lafayette as a co-applicant, filed for adjudication of a 5,000 acre-foot conditional water storage right for the Gross Reservoir Environmental Pool. Among other beneficial uses, and pursuant to the Gross Reservoir IGAs, Boulder sought a decreed instream flow use to be made by the CWCBC of the Gross Reservoir Environmental Pool water storage right within the Subject Reach when water is released to meet the targeted flows in South Boulder Creek as described in the Lafayette-Boulder IGA.
- G. The water rights described in Paragraphs E and F above collectively shall be referred to herein as the "Subject Water Rights."
- H. The CWCBC holds the following decreed instream flow water rights on South Boulder Creek between the outlet of Gross Reservoir and South Boulder Road:

| Decree | Stream | Upper Terminus | Lower Terminus | Flow rates in cfs (dates) | Appropriation Date |
|-------------------|---------------------|--------------------|---------------------------|------------------------------------|--------------------|
| 80CW0379 (Div. 1) | South Boulder Creek | outlet Gross Res | USGS gage 06729500 | 15 (5/1 - 9/30) 6 (10/1 - 4/30) | 12/02/1980 |
| 80CW0379 (Div. 1) | South Boulder Creek | USGS Gage 06729500 | South Boulder Road bridge | 15 (5/1 - 9/30) 2 (10/1 - 4/30) | 12/02/1980 |

The reaches for the CWCBC's instream flow water rights decreed in Case No. 80CW379 are generally depicted in the map attached hereto as **Exhibit A**.

- I. The CWCBC and Boulder wish to cooperate in accomplishing and protecting the Targeted Flows identified in the Gross Reservoir IGAs in South Boulder Creek from the outlet of Gross Reservoir to the confluence of South Boulder Creek and Boulder Creek. Flow rates recommended by the CPW to preserve the natural environment to a reasonable degree have been approved by CWCBC ("CWCBC/CPW Flows"). The CWCBC/CPW Flow rates are equal to or in excess of the existing appropriated and decreed instream flow rates through the

IGA identified reaches. Some of the existing decreed instream flow rates were water supply limited, but the original analysis for the amount of water to preserve the natural environment to a reasonable degree is consistent with the new CWCB/CPW Flow rates.

- J. For the purposes of administration, the CWCB/CPW rates will be met in whole or in part with existing CWCB instream flow water rights in the applicable stream segments, to the extent the existing instream flow rights are in priority. When the CWCB instream flow rights are out of priority, and/or when the CWCB instream flow water rights are insufficient to bring South Boulder Creek up to the Targeted Flows, Gross Environmental Pool releases may be made. Therefore, the amount of water to be protected from diversion or exchange in a given reach would be the amount released to meet the Targeted Flow releases plus any water available pursuant to existing instream flow rights in that reach, to the extent such rights are in priority, up to the CWCB/CPW rates. The IGA Targeted Flows and the CWCB/CPW Flows are identified in **Table 1** below.
- K. Pursuant to Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2CCR 408-2, on July 17, 2019, the CWCB found that deliveries of water under this Agreement are appropriate for stream flows to preserve the natural environment in three segments of the Subject Reach to a reasonable degree at rates up to the CWCB/CPW Flows.

NOW THEREFORE, the CWCB and Boulder agree as follows:

DELIVERY

1. Subject to the terms of this Agreement and in accordance with the Gross Reservoir IGAs, Boulder will release and deliver water stored in the Gross Reservoir Environmental Pool under its Subject Water Rights ("Environmental Pool Releases"), in the volumes and at rates of flow and times to be determined at the sole discretion of Boulder but in consultation with the CWCB, to be necessary to meet the Targeted Flows set forth in the Lafayette–Boulder IGA, for exclusive use by the CWCB to help maintain stream flows to preserve the natural environment to a reasonable degree in the Subject Reach.
2. Delivery of water in accordance with this Agreement is subject to availability under the Subject Water Rights and the terms and conditions of the Gross Reservoir IGAs. Boulder is under no obligation to deliver water to the CWCB pursuant to this Agreement when (1) water yielded from the Subject Water Rights is not in storage or available in the Environmental Pool, (2) when Environmental Pool Releases are not necessary to preserve the natural environment up to the Targeted Flows in the IGA, or (3) Environmental Pool Releases are not being made by Boulder to meet the Targeted Flows that are set forth in the Lafayette–Boulder IGA.
3. The CWCB shall, when notified by Boulder that water is being released pursuant to this Agreement, protect the delivered Environmental Pool Releases through the Subject Reach by requesting administration by the Colorado State and Division Engineers to prevent

diversion or depletion of, or exchange upon, the water by other water users. In the event that CWCBC does not or cannot protect the full amount of the Environmental Pool Releases in accordance with the terms of this Agreement, nothing in this Agreement shall prevent Boulder from exercising its water rights in a manner consistent with its decrees as entered in Case Nos. 16CW3160 and 17CW3212.

CWCBC PARTICIPATION IN CASE NOS. 16CW3160 AND 17CW7212

4. Boulder and the City of Lafayette have agreed that the CWCBC shall be a co-applicant in Case Nos. 16CW3160 and 17CW3212 for the limited purpose of obtaining a decreed right to use water for instream flow purposes under this Agreement. The Parties to this Agreement agree that Boulder, or the in the case of 17CW3212, Boulder and Lafayette, shall be responsible for prosecuting the applications in those cases as they deem appropriate in their sole discretion, including any subsequent diligence applications and applications to make the conditional water rights absolute. Boulder shall consult with the CWCBC, however, regarding any position taken or term and condition proposed by an Opposer regarding the applications in Case Nos. 16CW3160 and 17CW3212, or in subsequent applications for diligence or to make the conditional water rights absolute, that may affect the CWCBC's ability to protect for instream flow purposes water that is released by Boulder from the Gross Reservoir Environmental Pool pursuant to this Agreement, or affect the CWCBC's determination that the flows to be released and protected pursuant to this Agreement are appropriate to preserve the natural environment to a reasonable degree.

CONDITIONS OF THE CWCBC'S USE OF WATER DELIVERED BY BOULDER

5. The CWCBC shall use the Environmental Pool Releases to help maintain stream flows in South Boulder Creek through the Subject Reach to preserve the natural environment at rates up to CWCBC/CPW Flows with the Subject Water Rights as set forth in **Table 1** below.
6. The release and delivery of water from the Gross Reservoir Environmental Pool by Boulder for the CWCBC's use for instream flows in no way provides the CWCBC an operating interest or ownership in Boulder's facilities or other water rights as they exist now or may exist in the future. The City's obligations as provided in this Agreement are expressly subject to Section 121 of the Boulder Home Rule Charter and §11-1-32 of the Boulder Revised Code.
7. The CWCBC's exclusive right to use water released from Gross Reservoir under the Subject Rights in the Subject Reach under this Agreement extends to and terminates at the downstream terminus of the Subject Reach at the confluence of South Boulder Creek and Boulder Creek.

Table 1.

IGA Targeted Flows and CWCB/CPW Flows for Three South Boulder Creek Segments in the Subject Reach

| Stream Segment | IGA TARGETED FLOWS | | | | CWCB/CPW FLOWS | |
|--|-----------------------|-------------|------------------------|-------------|-----------------------|------------------------|
| | Summer (May–Sept.) | | Winter (Oct.–April) | | Summer (May–Sept.) | Winter (Oct.–April) |
| | Average Year | Dry Year | Average Year | Dry Year | All Year Types | |
| Segment 1 Gross Reservoir to USGS gage 06729500 | 10 cfs | 7 cfs | 7 cfs | 5 cfs | 15 cfs (Preserve) | 8 cfs (Preserve) |
| Segment 2 USGS gage 06729500 to South Boulder Road | 10 cfs | 7 cfs | 7 cfs | 5 cfs | 15 cfs (Preserve) | 8 cfs (Preserve) |
| Segment 3 South Boulder Road to confluence with Boulder Creek | 4 cfs | 2 cfs | 2.5 cfs | 1.5 cfs | 5.8 cfs (Preserve) | 2.5 cfs (Preserve) |

USE OF THE SUBJECT WATER RIGHTS BY BOULDER DOWNSTREAM OF THE
SUBJECT REACH

- In accordance with section 37-92-102(3), C.R.S. (2018), section 37-87-102(4), C.R.S. (2018), and the decrees adjudicating the CWCB's right to use the Environmental Pool Releases for instream flow purposes, Boulder may redivert and bring about the beneficial use of its Subject Water Rights downstream of the Subject Reach as fully consumable reusable water.

ACCOUNTING AND REPORTING

- Boulder shall be responsible for maintaining all records and accounting necessary for the implementation of this Agreement, using forms mutually agreeable to the parties, and all records required by the Division Engineer and water court decrees for administration of the Environmental Pool Releases.

10. Boulder will provide accounting related to the operation of this Agreement to the CWCB and to the Division Engineer when requested.

MISCELLANEOUS PROVISIONS

11. The term of this Agreement is perpetual unless terminated under the provisions of this paragraph. This Agreement may only be amended or terminated by the written agreement of the parties.
12. The CWCB is not responsible for modification of any structures that may be necessary for use of the Subject Water Rights to preserve the natural environment, including but not limited to modification of the Community Ditch structure.
13. This Agreement shall not be assignable by any party without written consent of the other.
14. Pursuant to section 37-92-102(3), C.R.S. (2018), the terms of this Agreement shall be enforceable by each party as a water matter in the District Court for Water Division No. 1; provided, however, that before commencing any action for enforcement of this Agreement, the party alleging the violation shall notify the other party in writing of the alleged violation and the parties shall make a good faith effort to resolve their differences through informal consultation.
15. Specific performance of this Agreement shall be the exclusive remedy for failure of any party to comply with any provision of this Agreement.
16. This Agreement shall be construed in accordance with the laws of the State of Colorado and shall be interpreted broadly to effect its purposes.
17. Should any conflict appear to exist between this Agreement and either of the Gross Reservoir IGAs or any amendments thereto, or the decrees in Case Nos. 16CW3160 and 17CW3212, the parties shall consult on how to resolve the conflict.
18. Any notice or request required or permitted to be given under this Agreement will be in writing and considered effective when delivered by fax, email, hand delivery, Express Mail, Federal Express, or similar service, or on the third mail-delivery day after being deposited in the United States mail, postage prepaid, addressed to the parties as follows:

If to the CWCB:

Colorado Water Conservation Board
Stream and Lake Protection Section
1313 Sherman Street, Room 721
Denver, CO 80203
dnr_cwcbisf@state.co.us

If to Boulder:

City of Boulder
c/o/ Water Resources Manager
P.O. Box 791
Boulder, CO 80306-0791
taddeuccij@bouldercolorado.gov
bloomj@bouldercolorado.gov

19. Nothing contained in this Agreement is intended to or shall create a contractual relationship with, cause of action in favor of, or claim for relief for, any third party. Any third party receiving a benefit from this Agreement is an incidental and unintended beneficiary only.

IN WITNESS WHEREOF, the CWCBC and Boulder have executed this Agreement as of the last date of execution.

**COLORADO WATER CONSERVATION
BOARD**

By: Rebecca Mitchell
Rebecca Mitchell, Director

Date: 8/5/19

CITY OF BOULDER

Jim S Brantingham
City Manager

Date: 9-9-2019

ATTEST:

Lythia Bane
City Clerk

Date: 9/9/2019

APPROVED AS TO FORM:

[Signature]

City Attorney's Office

Date: 9/9/19

RECEIVED

DEC 28 2009

PITKIN COUNTY ATTORNEY

John M. Ely
County Attorney

Courthouse Annex Building
530 East Main Street, Suite 302
Aspen, Colorado 81611-1948

Christopher G. Seldin
Assistant County Attorney

Tel: (970) 920-5190
Fax: (970) 920-5198

Carrington Brown
Code Enforcement Officer

Colorado Water Conservation Board

Legal Assistants:
Lisa MacDonald
Jane Achey

December 23, 2009

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

RE: Executed Declaration of a Revocable Trust

Dear Linda:

Along with this letter, please find an executed copy of the Declaration of a Revocable Trust between our Board and the Colorado Water Conservation Board.

Should you need anything further, feel free to contact me at the phone number above.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa MacDonald', is written over a horizontal line.

Lisa MacDonald, Paralegal to
John M. Ely

encls

Declaration of a Revocable Trust
(The Pitkin County Water Rights Revocable Trust)

RECITALS

WHEREAS, this Declaration of a Revocable Trust ("Trust Agreement") is made and executed this 23rd day of DECEMBER, 2009, by and between the Board of County Commissioners for the County of Pitkin ("Settlor") and the Colorado Water Conservation Board ("Trustee" or "CWCB") (collectively, the "Parties").

WHEREAS, the Trustee is a Colorado administrative agency that was created by statute in 1937 for the purpose of aiding in the protection and development of the waters of the state. It is responsible for water project planning and finance, stream and lake protection, flood hazard identification and mitigation, weather modification, river restoration, water conservation and drought planning, water information, and water supply protection. Pursuant to Colorado law, it has the exclusive authority to hold instream flows in the state of Colorado.

WHEREAS, the Trustee is authorized by Section 37-92-102(3), C.R.S. (2008), to acquire from any person, including any governmental entity, such water, water rights or interests in water as it determines may be required for instream flows to preserve or improve the natural environment to a reasonable degree and to take whatever action may be needed to ensure such instream flows remain in the river.

WHEREAS, the Trustee holds numerous instream flow water rights in the Roaring Fork and Crystal Rivers, and their tributaries ("Roaring Fork River Basin"). In dry years, these instream flow water rights have been known to suffer shortages to varying degrees, with some shorted in the extreme.

WHEREAS, Settlor owns various water rights in the Roaring Fork River Basin, which it holds to manage for the citizens of Pitkin County. Settlor may also acquire various water rights through lease or other contractual arrangements or acquisitions. Some of Settlor's water rights were acquired through Settlor's Open Space and Trails Department with restricted funds and may not be converted or sold without voter approval. Some of Settlor's water rights were acquired through Settlor's Airport Enterprise Fund pursuant to the Taxpayers' Bill of Rights ("TABOR"), under Article X, Section 20 of the Colorado Constitution, and must be managed in a manner consistent with the nature of such enterprise.

WHEREAS, Settlor desires to create a revocable trust of the water rights described in Exhibits A-1 and A-2, attached hereto and incorporated herein by reference (collectively, the "Trust Estate") for the purposes hereinafter set forth. Creation of the revocable trust is intended to assist in providing more water when needed for the Trustee's instream flow reaches in the Roaring Fork River Basin.

WHEREAS, Section 37-92-102(3), C.R.S., allows the Trustee to use water rights acquired through leases, loans and other arrangements for instream flow purposes pursuant to amendments to Sections 37-92-102(3), 37-92-103(2), and 37-92-305(3), C.R.S. House Bill 08-1280, signed by Governor Ritter on April 21, 2008, provides certain protections for water rights provided to the CWCB for use in the Instream Flow Program, pursuant to amendments to Sections 37-92-102(3), 37-92-103(2) and 37-92-305(3), C.R.S. It is specifically contemplated that each of those protections shall apply to the Trust Estate and a description of those protections shall be included in each of the water court decrees obtained pursuant to this Trust Agreement.

WHEREAS, the Settlor agrees to execute such further instruments as shall be necessary to vest the Trustee with full authority to manage the Trust Estate, and the Trustee agrees to hold the Trust Estate for the following uses and purposes set forth herein and subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the promises and mutual covenants herein contained, it is agreed as follows:

REVOCABLE TRUST

I. **Purpose of the Trust.** The purpose of the Trust is to preserve and improve the natural environment to a reasonable degree by providing water rights to supplement instream flows in the Roaring Fork River Basin. In accordance with the entrustment by Settlor and the provisions of this Trust Agreement, Trustee will hold, manage, and operate the Trust Estate in a manner that maximizes the purpose of the Trust.

II. **Beneficiary of the Trust.**

The Trust is a self-benefited trust, with the Board of County Commissioners of Pitkin County being the beneficiary of the Trust.

III. **Delivery of the Trust Estate.**

A. Ownership of the Trust Estate shall not be transferred from the Settlor to the Trustee as a result of the entrustment contemplated by this Trust Agreement.

B. The Settlor and Trustee shall, within six (6) months of the execution of this Trust Agreement, file an application, as co-applicants, with the District Court in and for Water Division 5 (the "Water Court") to change the use of the Stapleton Brothers Ditch water rights identified in **Exhibit A-1** to add instream flows as a beneficial use (the "Stapleton Water Court case"). The Stapleton Water Court case shall be prosecuted pursuant to Sections 37-92-102(3) and 37-92-305, C.R.S., as amended by House Bill 08-1280. The protections of House Bill 08-1280 shall be specifically incorporated in any decree obtained in the Stapleton Water Court case. The Settlor shall have the right to dismiss the Stapleton Brothers Water Court case if it appears likely to the Settlor that a decree will be entered with terms and conditions that would: (i) establish an unreasonable obligation on the Settlor or (ii) substantially decrease the value of the

Stapleton Brothers Ditch water rights. The Settlor shall consult with the Trustee prior to taking any action to dismiss the Stapleton Water Court case. The Stapleton Brothers Ditch water rights identified in **Exhibit A-1** shall be deemed delivered to and available for use by the Trustee upon receipt of a final decree in the Stapleton Water Court case.

C. The Settlor and Trustee's staff shall, within twelve (12) months after receipt of a final decree in the Stapleton Water Court case begin the process to obtain approval of the CWCB to add the water rights identified in **Exhibit A-2** to the Trust Estate in accordance with the procedures set forth in Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, or any other applicable Rule duly promulgated by the CWCB and in effect at the time of such addition. The Trustee and Settlor shall not be obligated to proceed with such addition if CWCB approval requires terms and conditions that would: (i) establish an unreasonable obligation on the Trustee or the Settlor or (ii) substantially decrease the value of the water rights. After obtaining such approval, the Settlor and Trustee shall file a Water Court application, as co-applicants, with the Water Court to change the use of the water rights identified in **Exhibit A-2** to add instream flows as a beneficial use (the "Remainder Water Court case"). The Remainder Water Court case shall be prosecuted pursuant to Sections 37-92-102(3) and 37-92-305, C.R.S., as amended by House Bill 08-1280. The protections of House Bill 08-1280 shall be specifically incorporated in any decree obtained in the Remainder Water Court case. The Trustee or the Settlor shall have the right to dismiss the Remainder Water Court case if it appears likely to the Settlor that a decree will be entered with terms and conditions that would: (i) establish an unreasonable obligation on the Trustee or the Settlor or (ii) substantially decrease the value of the remaining water rights. The Parties shall consult with each other prior to taking any action to dismiss the Remainder Water Court case. The water rights changed in the Remainder Water Court case shall be deemed delivered to and available for use by the Trustee upon receipt of a final decree in the Remainder Water Court case.

D. Each Party shall bear its own costs and expenses in the Water Court cases. The Parties shall each bear one-half of the responsibility for any services of an engineer or other consultant necessary to file and prosecute the Water Court cases.

IV. Settlor's Warranties, Rights, and Obligations.

A. The Settlor warrants that it has the legal status and legal capacity to execute, deliver, and perform all requirements of this Trust Agreement and that it has full power and authority to execute and deliver this Trust Agreement and all other documents to be entered into in relation to this Trust Agreement, and it has full power and authority to operate under the entrustment provided for herein.

B. The Settlor reserves the exclusive right at any time and from time to time by instrument in writing signed by the Settlor and delivered to the Trustee to modify or alter this Trust Agreement, in whole or in part, without the consent of the Trustee provided that the duties, powers, and liabilities of the Trustee under this Trust Agreement shall not be changed without its consent; and the Settlor reserves and shall have the right, by instrument in writing, signed by the Settlor and delivered to the

Trustee, to cancel and annul this Trust Agreement, as provided in Section XIV of this Trust Agreement.

C. After the expiration of the Initial Period defined in Section XIV.B, the Settlor may from time to time withdraw all or part of the water rights in the Trust Estate by delivering an instrument in writing duly signed by the Settlor to the Trustee substantially similar to that attached hereto as **Exhibit B**. Such instrument shall describe the property or portion thereof desired to be withdrawn. Upon receipt of such instrument, the Trustee shall thereupon immediately cease the use of the water rights described therein. At least thirty (30) days prior to any such withdrawal, the Settlor shall consult with the Trustee regarding the circumstances and timing of the intended withdrawal.

D. The Settlor may at any time and from time to time add water rights to the Trust Estate by providing written notice to the Trustee of such intent, describing the property or portion thereof desired to be added to the Trust Estate, in a form substantially similar to that attached hereto as **Exhibit C**. The Settlor may add water rights to which it holds title or in which it has a contractual or other interest. The Settlor and the Trustee's staff must obtain approval of the CWCB to add such water rights to the Trust Estate in accordance with the procedures set forth in Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, or any other applicable Rule duly promulgated by the CWCB and in effect at the time of such addition. Neither the Trustee nor the Settlor shall be obligated to proceed with such addition if CWCB approval requires terms and conditions that would: (i) establish an unreasonable obligation on the Trustee or the Settlor or (ii) substantially decrease the value of the water rights. After obtaining such approval, the Settlor and Trustee shall file a Water Court application to add instream flow uses as a beneficial use ("Supplemental Water Court case"). Any Supplemental Water Court case shall be prosecuted pursuant to Sections 37-92-102(3) and 37-92-305, C.R.S., as amended by House Bill 08-1280. The protections of House Bill 08-1280 shall be specifically incorporated in any decree obtained in the Supplemental Water Court case. The Trustee or the Settlor shall have the right to dismiss any Supplemental Water Court case if it appears likely that a decree will be entered with terms and conditions that would: (i) establish an unreasonable obligation on the Trustee or the Settlor or (ii) substantially decrease the value of the supplemental water rights. The Parties shall consult with each other prior to taking any action to dismiss any Supplemental Water Court case. The water rights changed in any Supplemental Water Court case shall be deemed delivered to and available for use by the Trustee upon receipt of a final decree in such Supplemental Water Court case.

E. The Settlor shall arbitrate, sue upon, defend against, or otherwise deal with and settle claims in favor of or against the Trust Estate as it deems best and the Settlor's decisions regarding and ultimate resolution of any such claims shall be binding and conclusive.

F. Nothing herein shall limit the Settlor's ability to protect the Trust Estate by filing statements of opposition in water court cases that may potentially injure the

Trust Estate; provided, however, that the Settlor shall consult with the Trustee regarding any such statements of opposition prior to filing.

G. The Settlor may bring about beneficial use of the historical consumptive use of the Trust Estate downstream of the instream flow reach benefited by the Trust Estate as fully consumable reusable water or in any other manner allowed by law.

V. Trustee's Warranties, Rights, and Obligations.

A. The Trustee warrants that it has the legal status and legal capacity to execute, deliver, and perform all requirements of this Trust Agreement and that it has full power and authority to execute and deliver this Trust Agreement and all the other documents to be entered into by it in relation to this Trust Agreement, and it has full power and authority to operate under the entrustment provided for herein.

B. The Trustee shall use the Trust Estate for the purposes of preserving or improving the natural environment to a reasonable degree by protecting streamflows in the state of Colorado under Section 37-92-102(3), C.R.S., as amended by House Bill 08-1280, at all times as allowed by all applicable water court decrees and Colorado law, so long as this Trust Agreement is in effect.

C. The Trustee shall be responsible for: (1) maintaining records of how much water it uses under the Trust Agreement each year it is in effect; and (2) recording the actual amount of water legally available and capable of being diverted under the Trust Estate during the term of the Trust Agreement, and for providing such records to the Division of Water Resources for review and publication. The Trustee shall be responsible for all administration, monitoring and measuring required by the Division Engineer to use the Trust Estate for instream flow purposes. To the extent that the Division Engineer requires installation of stream gages or other measuring devices in connection with such use, the Trustee shall be responsible for such installation, subject to the availability of funds for such installation. The Trustee shall be responsible for maintaining all records required by the Division Engineer for administration of the Trust Estate for instream flow purposes. The Trustee and Settlor shall coordinate on whether the Settlor may provide assistance with the operation and maintenance of any such required stream gages or other measuring devices.

D. On January 15 of each year that the Trust Agreement is in force, the Trustee shall provide an annual update to the Settlor regarding use of the Trust Estate for instream flow purposes, including but not limited to flow data from the preceding year, any enforcement activities from the previous year, and planned operations and other considerations for the forthcoming year.

E. The Trustee agrees to undertake such acts as are reasonably required to carry out the tenor, purpose, and intent of this Trust Agreement. To that end, the Trustee shall place a call to enforce the seniority of the Trust Estate in the event the instream flow water right being benefited by all or a portion of the Trust Estate is injured or is presumed to be injured by other water users. If such activities include

filing statements of opposition to water court cases, the Trustee shall identify this Trust Agreement in any such statement of opposition. Nothing herein shall diminish the CWCB's right to exercise its discretion regarding enforcement of instream flow water rights; however, the CWCB acknowledges that the intended use of the Trust Estate is to preserve or improve the natural environment to a reasonable degree.

F. The Trustee shall not assign, pledge, sell, or transfer in any manner any part of the Trust Estate, nor shall it have the power to encumber any part of the Trust Estate.

G. The Trustee shall not engage in any activity that will harm the Settlor's interest the Trust Estate.

VI. **Covenant.** This Trust Agreement shall be a covenant which runs with the Trust Estate. This Trust Agreement shall be recorded by the Settlor with the Clerk and Recorder of Pitkin County, Colorado and of Garfield County, Colorado.

VII. **Notice.** Any notice, request, demand and other correspondence made as required by or in accordance with this Trust Agreement shall be made in writing and delivered to the relevant Party at the contact information set out below. Such notice or other correspondence shall be deemed to have been delivered when it is transmitted if transmitted by facsimile, when it is delivered if delivered in person, and three (3) days after posting the same if posted by mail.

To Settlor:

John M. Ely, Esq.
Pitkin County Attorney
530 East Main Street, Suite 302
Aspen, Colorado 81611-1948
Fax: (970) 920-5198

To Trustee:

Linda J. Bassi
Chief, Stream and Lake Protection Section
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203
Fax: (303) 866-4474

VIII. **Interpretation.** This Trust Agreement shall be construed, regulated, and governed by and in accordance with the laws of the State of Colorado and shall be interpreted broadly to effect its purpose.

IX. **Integration Clause.** This Trust Agreement shall supersede all previous agreements between the Parties, and shall be binding upon the Parties and their respective heirs, executors, administrators, successors, and assigns.

X. **Dispute Resolution; Jurisdiction and Venue.** Pursuant to Section 37-92-102(3) C.R.S., the terms of this Trust Agreement shall be enforceable by each party as a water matter in the District Court for Water Division 5; provided, however, that before commencing any action for enforcement of this Agreement, the party alleging a breach shall notify the other party in writing of the alleged breach and the parties shall make a good faith effort to resolve their differences through informal consultation.

XI. **No Waiver.** Any failure or delay by a Party in exercising any of its rights, powers and remedies hereunder or in accordance with laws (the "Party's Rights") shall not lead to a waiver of such rights, and the waiver of any single or partial exercise of the Party's Rights shall not preclude such Party from exercising such rights in any other way and exercising the remaining part of the Party's Rights.

XII. **Severability.** Each provision contained herein shall be severable and independent from each of other provisions, and if at any time any one or more provisions herein are found to be invalid, illegal, or unenforceable, the validity, legality, or enforceability of the remaining provisions herein shall not be affected as a result thereof.

XIII. **Amendments.** Any amendments or supplements to this Trust Agreement shall be made in writing and shall take effect only when properly signed by the Parties to this Agreement.

XIV. **Term and Termination of the Trust.** This Trust Agreement shall become effective upon its execution.

A. The term of this Trust Agreement is perpetual unless terminated as allowed by this Section XIV.

B. This Trust Agreement may not be terminated during the initial ten (10) years after this Trust Agreement is executed ("Initial Period").

C. After the expiration of the Initial Period, this Trust Agreement may be terminated upon at least six (6) months prior notice in writing by either Party to the other Party to terminate the Trust hereunder, after which the Trust hereunder shall terminate at the expiration of such six (6) month period or at a later date specified in the termination notice. At least thirty (30) working days prior to providing such notice, the Party initiating the termination shall consult with the other Party regarding its intent to terminate the Trust Agreement.

D. The Trust Agreement shall also be terminated upon occurrence of any event that leads to such termination in accordance with the laws of the State of Colorado.

E. Upon termination of the Trust Agreement, the Trust Estate shall belong to the Settlor and the Trustee shall act at the instruction of Settlor to take all reasonable

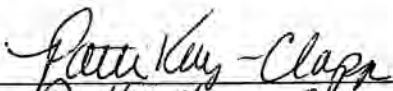
actions immediately necessary to return the Trust Estate and management thereof to the Settlor.

XV. Rule Against Perpetuities. If it shall be determined that any provisions of the Trust Agreement violates any rule against perpetuities or remoteness of vesting now or hereafter in effect in a governing jurisdiction, the affected portion of the Trust Estate shall be administered as provided in this Trust Agreement until the termination of the maximum period allowed by law at which time and forthwith such part of the Trust Estate shall be removed from the Trust and returned to the quiet possession of the Settlor.

I certify that I have read the foregoing Trust Agreement and it correctly states the terms and conditions under which the Trust Estate is to be held and managed by the Trustee.

Dated as of the date set forth above.

SETTLOR, BOARD OF COUNTY COMMISSIONERS
OF PITKIN COUNTY:


By: Patti Kay-Clapper
Its: Chair

ATTEST:


By: Jeanette Jones
Clerk to the Board of County Commissioners

[Trustee]

actions immediately necessary to return the Trust Estate and management thereof to the Settlor.

XV. Rule Against Perpetuities. If it shall be determined that any provisions of the Trust Agreement violates any rule against perpetuities or remoteness of vesting now or hereafter in effect in a governing jurisdiction, the affected portion of the Trust Estate shall be administered as provided in this Trust Agreement until the termination of the maximum period allowed by law at which time and forthwith such part of the Trust Estate shall be removed from the Trust and returned to the quiet possession of the Settlor.

I certify that I have read the foregoing Trust Agreement and it correctly states the terms and conditions under which the Trust Estate is to be held and managed by the Trustee.

Dated as of the date set forth above.

SETTLOR, BOARD OF COUNTY COMMISSIONERS
OF PITKIN COUNTY:

By: _____
Its: _____

ATTEST:

By: _____
Clerk to the Board of County Commissioners

TRUSTEE, COLORADO WATER CONSERVATION BOARD:


By: Jennifer Gimbel, Director

Exhibit A-1
Description of Trust Estate - Stapleton Brothers Ditch Water Rights

| Name | Decree | Source | Amount |
|--------------------------|---------|-----------------------|---------------------------|
| Stapleton Brothers Ditch | 99CW306 | Roaring Fork River | 4.3 cfs (119.25 AF/yr) |

Exhibit A-2
Description of Trust Estate - Remaining Water Rights

| Name | Decree | Source | Amount |
|--|---------------|--|----------------------|
| Cramer Ditch, Original Construction | C.A. No. 132 | Sopris Creek | 0.143 cfs |
| Cramer Ditch, First Enlargement | C.A. No. 132 | Sopris Creek | 0.143 cfs |
| Cramer Ditch, Second Enlargement | C.A. No. 132 | Sopris Creek | 0.143 cfs |
| Cramer Ditch, Third Enlargement | C.A. No. 3082 | Sopris Creek | 0.143 cfs |
| Cramer Ditch (aka Beard Ditch) | W-867 | Sopris Creek | 0.143 cfs |
| Cramer Ditch (aka Beard Ditch) (appropriation date 8/25/1961) | W-867 | Sopris Creek | 0.143 cfs |
| Cramer Ditch, Fourth Enlargement | W-3414 | Sopris Creek | 0.143 cfs |
| Home Supply Ditch, Original Construction | C.A. No. 132 | Roaring Fork River | 0.5 cfs |
| Home Supply Ditch, First Enlargement | C.A. No. 2811 | Roaring Fork River | 0.5 cfs |
| Home Supply Ditch, Second Enlargement | C.A. No. 3082 | Roaring Fork River | 0.5 cfs |
| Home Supply Ditch (alternate point of diversion) | W-1801 | Roaring Fork River | 0.5 cfs |
| U.S. Green Ditch No. 2 | C.A. No. 4033 | Unnamed tributary of the Roaring Fork River | 1.0 cfs ¹ |
| U.S. Green Ditch No. 1 | C.A. No. 4033 | Wheel Barrow Gulch | 1.0 cfs ² |
| J.H. Smith, Warren Creek Ditch No. 1 | C.A. No. 4033 | Warren Creek | 1.5 cfs ³ |
| U.S. Green Ditch No. 1 | C.A. No. 4033 | Wheel Barrow Gulch | 2.0 cfs ⁴ |
| Wilke Ditch | C.A. No. 2136 | Crystal River | 1.2 cfs |
| Crystal River Hot Spring Cooling Water Diversion and Pipeline | 87CW202 | Crystal River | 0.5 cfs |

¹ May require cooperation with Aspen Center for Environmental Studies.
² 1.0 acre-foot per year of historic consumptive use leased to James Hunting until 2038.
³ Owned in joint tenancy with City of Aspen.
⁴ Owned in joint tenancy with City of Aspen.

| Name | Decree | Source | Amount |
|--|-----------------------|--|--------------|
| Crystal River Hot Spring and Pool (aka Granite Hot Springs Nos. 1-4) | 87CW202 | Geothermal groundwater and surface water tributary to the Crystal River | 0.01 AF |
| Low Line Ditch, Original Construction | C.A. No. 1007 | Crystal River | 1.538088 cfs |
| Mautz Spring and Mautz Ditch Nos. 1 and 2 | C.A. No. 4033 | Mautz Spring is the source for the Mautz Ditch Nos. 1 and 2, along with snow, rain and waste water that run into said spring and ditches | 2.0 cfs |
| John Stern Ditch No. 1 | C.A. No. 5884 W-3103 | Waste and seepage water | 0.5 cfs |
| Jote Smith Ditch, Original Construction | C.A. No. 132 | Brush Creek | 0.72 cfs |
| Jote Smith Ditch, First Enlargement | C.A. No. 132 | Brush Creek | 0.25 cfs |
| Cozy Point Ditch, Original Construction | C.A. No. 132 92CW007 | Brush Creek | 0.19 cfs |
| Cozy Point Ditch, First Enlargement | C.A. No. 3723 92CW007 | Brush Creek | 0.24 cfs |
| Upper Wiese Ditch | C.A. No. 2689 92CW007 | Brush Creek | 0.20 cfs |
| Upper Wiese Ditch (appropriation date 9/1/1936) | C.A. No. 3723 92CW007 | Brush Creek | 0.62 cfs |
| Cozy Point Pond | 88CW479 93CW003 | Brush Creek | 2.0 AF |
| Stapleton Ditch | C.A. No. 132 | Owl Creek | 2.0 cfs |
| Stapleton Ditch, First Enlargement | C.A. No. 132 | Owl Creek | 0.8 cfs |
| Bivert Ditch | C.A. No. 132 | Owl Creek | 0.5 cfs |
| Bivert Ditch, First Enlargement | C.A. No. 132 | Owl Creek | 1.0 cfs |
| Walthen Ditch | C.A. No. 132 | Woody Creek | 3.0 cfs |
| Walthen Ditch, First Enlargement | C.A. No. 132 | Woody Creek | 3.2 cfs |

Exhibit B
Notice of Withdrawal

Linda J. Bassi
Chief, Stream and Lake Protection Section
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203
Fax: (303) 866-4474

Re: Pitkin County Revocable Water Rights Trust - Notice of Withdrawal

Dear Linda:

Pursuant to Section IV.C. of the Pitkin County Revocable Water Rights Trust Agreement, Pitkin County is hereby providing notice of its intent to withdrawal water rights from the Trust Estate. The following water rights will be withdrawn from the Trust Estate:

| <u>Name</u> | <u>Decree</u> | <u>Source</u> | <u>Amount</u> |
|-------------|---------------|---------------|---------------|
|-------------|---------------|---------------|---------------|

As required by Section IV.C. of the Trust Agreement, Pitkin County contacted the CWCB at least 30 days prior to this notice to discuss the withdrawal of the water rights specified above. Upon receipt of this letter, the CWCB shall immediately cease the use of the water rights specified above for instream flow purposes.

Sincerely,

John M. Ely
Pitkin County Attorney

Exhibit C
Notice of Addition

Linda J. Bassi
Chief, Stream and Lake Protection Section
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203
Fax: (303) 866-4474

Re: Pitkin County Revocable Water Rights Trust – Notice of Addition

Dear Linda:

Pursuant to Section IV.D. of the Pitkin County Revocable Water Rights Trust Agreement, Pitkin County is hereby providing notice of its intent to add water rights from the Trust Estate. The County wishes to add the following water rights to the Trust Estate:

| <u>Name</u> | <u>Decree</u> | <u>Source</u> | <u>Amount</u> |
|-------------|---------------|---------------|---------------|
|-------------|---------------|---------------|---------------|

As required by Section IV.D. of the Trust Agreement, we must obtain CWCB approval to acquire the water rights specified above as required by Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program. Please contact me at your convenience to begin the approval process.

Sincerely,

John M. Ely
Pitkin County Attorney

AGREEMENT

The Colorado Water Conservation Board ("Board"), an agency of the State of Colorado, and the City of Boulder ("Boulder"), a Colorado municipal corporation, in consideration of the mutual promises contained in this document, agree as follows:

RECITALS

A. The Board is the owner of a 15 cubic foot per second ("c.f.s.") instream flow water right to maintain a minimum stream flow to protect the natural environment to a reasonable degree in that segment of the mainstem of Boulder Creek in Boulder County from the Public Service Company's hydroelectric plant outlet at Orodell (NE 1/4, SW 1/4, Section 34, Township 1 North, Range 71 West of the 6th P.M.) to the 75th Street Bridge (SW 1/4, Section 13, Township 1 North, Range 70 West of the 6th P.M.) (the "specified reach"), which water right (the "1974 right") was decreed on January 21, 1980, in Case No. W-7636-74, with an appropriation date of October 1, 1973. The Board is also the owner of a water right for 1.0 c.f.s., originally decreed to the G. Berkley Ditch, appropriation date June 1, 1862, decreed in Boulder County District Court on June 2, 1882, and changed from irrigation to instream flow purposes in Case No. 79CW308 on May 13, 1981 (the "Berkley Ditch right").

45

B. Pursuant to section 37-92-102(3), C.R.S. (1989 Supp.), the Board is vested with statutory authority to acquire, by contractual agreement, such water, water rights, or interests in water as the Board determines may be required for minimum stream flows to preserve the natural environment to a reasonable degree.

C. The Board determined and the court decreed, in connection with the filing of the application for the 1974 right, that the natural environment in the specified reach can be preserved to a reasonable degree with a stream flow of 15 c.f.s.

D. Boulder acknowledges that, under Colorado law, no person or entity other than the Board shall be granted a decree adjudicating a right to water or interests in water for instream flows in a stream channel between specific points for any purpose whatsoever.

E. Boulder wants to assist the Board in maintaining instream flows in the specified reach at times when the Board's two decreed instream flow rights as described in paragraph A above do not yield 15 c.f.s. As part of its Raw Water Master Plan dated September 15, 1988, approved by the Boulder City Council on December 20, 1988, Boulder committed itself to the goal of maintaining instream flows of up to 15 c.f.s. in the specified reach.

F. Subject to the terms of this Agreement, Boulder will convey by deed to the Board certain water rights for use by the Board to maintain instream flows in the specified reach, said conveyance to be subject to a reservation by Boulder of the right to use water available under the conveyed water rights for municipal purposes under certain circumstances relating to extraordinary drouth or emergency conditions in its municipal water supply, as more fully described in paragraph 2a below. In addition, Boulder will, at its discretion, assign to the Board its right to water stored in its reservoirs.

G. The water rights to be conveyed and the water rights to be assigned are currently decreed for municipal and other purposes, but not for instream flow use. The use of the water rights and the water by the Board for instream flow purposes will require Water Court approval of various changes of water rights.

CONVEYANCE OF DIRECT FLOW WATER RIGHTS

1. Subject to such rights as are reserved by Boulder pursuant to paragraphs 2, 3, and 6 of this Agreement, Boulder shall convey to the Board the following described water rights (the "conveyed water rights"):

Farmers Ditch, 13.52 c.f.s. out of 73.29 c.f.s. total decreed, appropriation date of October 1, 1862;

Anderson Ditch, 1.81 c.f.s. out of 25 c.f.s. total decreed, appropriation date of October 1, 1860;

Smith and Goss Ditch, 0.4 c.f.s. out of 44.3 c.f.s. total decreed, appropriation date of November 15, 1859;

McCarty Ditch, 0.64 c.f.s. out of 5.00 c.f.s. total decreed, appropriation date of June 1, 1862; and

Harden Ditch, 1.8 c.f.s. out of 21.0 c.f.s. total decreed, appropriation date of June, 1 1862.

All of the above water rights were originally decreed by the District Court in and for Boulder County on June 2, 1882, and all were changed from irrigation to municipal use by decree of the Water Court, Water Division No. 1, in Case Nos. W-7569, W-7570, and W-8520-77, entered May 31, 1989, subject to the terms and conditions therein.

2. The conveyance of the conveyed water rights shall be made within 30 days of the execution of this Agreement by deed in substantially the form of Exhibit A attached hereto. Said conveyance shall reserve to Boulder:

a. The right to use water available under the conveyed water rights for its municipal purposes in the event of extraordinary drouth conditions or of emergency conditions involving the loss of water to its municipal system as a result of catastrophic events (such as failure of conveyance or treatment facilities); provided, however, that extraordinary drouth conditions or emergency conditions shall be deemed to exist only if Boulder has implemented a conservation program in response to such drouth or emergency which significantly restricts lawn watering and other outdoor uses and only if Boulder has diverted and used the full amount of water available under all of its direct flow water rights other than the conveyed water rights;

b. The right to use water available under the conveyed water rights for municipal purposes at any time it may do so without reducing the flow in the specified reach below 15 c.f.s.; and

c. The right to use water available under the conveyed water rights for irrigation purposes downstream from the specified reach, as provided in paragraph 6 below.

3. The Board shall use the conveyed water rights solely to maintain an instream flow not exceeding 15 c.f.s. in the specified reach. When such purpose has been accomplished, any remaining water available under the conveyed water rights shall be reserved to Boulder pursuant to paragraph 2b above.

ASSIGNMENT OF THE RIGHT TO USE STORED WATER

4. Boulder shall assign to the Board its right to use such stored water as it determines from time to time, in its sole discretion, to be available for release from reservoirs in Boulder's municipal watershed or in Barker Reservoir. The Board shall use such releases of stored water solely for instream flow purposes in the specified reach. Boulder shall provide reasonable notice to the Board as to the availability of such storage water and shall make releases of such water for the Board's benefit only to the extent required to achieve flows not exceeding 15 c.f.s. in the specified reach.

BY-PASSED EXCHANGE WATER

5. Boulder has an appropriative right of exchange decreed in Case No. W-7852-74, entered as amended on September 15, 1982, which allows it to release water from Boulder Reservoir or Baseline Reservoir and to divert or to store water in its system in amounts up to 250 c.f.s. The appropriation date is December 31, 1954, and the application was filed in 1974, making this exchange right just senior to the Board's 1974 right. Boulder also has a stipulation with the Boulder and

White Rock Reservoir Company ("Company") which acknowledges the Company's senior right of exchange for 100 c.f.s. decreed on June 21, 1926, and which provides that Boulder has the right to substitute its own exchange on Boulder Creek.

a. The Board hereby acknowledges that Boulder may attempt to by-pass water otherwise divertible under its appropriative right of exchange or its stipulation with the Company and leave it in the stream channel for delivery to a point of diversion downstream from the specified reach, in which event stream flows in the specified reach would be greater than would otherwise be the case.

b. Boulder hereby acknowledges that under this agreement such by-passes will not constitute instream flow water rights and will not be legally cognizable and administerable as such, but rather will become available to the Board's 1974 right to the extent that it is in priority.

c. The Board shall have no obligations or responsibilities with respect to such by-passes. Boulder shall bear all risks and costs associated with making such by-passes and with endeavoring to prevent them from being diverted from the specified reach.

BOULDER'S RIGHT TO USE BELOW THE SPECIFIED REACH

6. Below the downstream terminus of the specified reach (i.e., below 75th Street), any legally permissible right to use, re-use or lease the water, water rights, or interests in water acquired by the Board pursuant to this Agreement shall belong exclusively to Boulder.

WATER COURT PROCEEDINGS

7. The Board and Boulder, as co-applicants, will file an application with the water court to allow as an alternate use of the conveyed water rights listed in paragraph 1 their use exclusively by the Board for instream flows in the specified reach to achieve flows not exceeding 15 c.f.s. The parties agree that Boulder may seek the alternate right to use the conveyed water rights for irrigation purposes downstream of the specified reach, recognizing that such downstream use will require special proof by Boulder of non-injury.

8. The Board and Boulder, as co-applicants, will file an application with the water court to allow as an alternate use of the storage rights for the reservoirs covered by paragraph 4 the assignment of its right to use water to the Board for use exclusively by the Board for instream flows in the specified reach to achieve flows not exceeding 15 c.f.s.

9. Either party may, in its sole discretion, cause any one of the above two applications to be dismissed at any time before the court issues a final decree. The other party shall not oppose any such effort to dismiss an application. If an application is dismissed for any reason or is denied in whole or in part, or if the decree of the court is conditioned in such manner as to prevent this Agreement from being completely fulfilled, then all of the right, title, and interest conveyed by Boulder to the Board under the terms of this Agreement shall be reconveyed by the Board to Boulder within 30 days of written demand by Boulder. In the event of such reconveyance, Boulder shall not receive any right to use water, water rights, or interests in water for instream flows in the specified reach.

10. Boulder shall pay for all of its own and all of the Board's costs and expenses required to file applications for and effectuate the necessary changes of water rights, including any obligation that may be incurred by either party to pay attorney's fees of third parties; provided, however, that Boulder shall not be required to reimburse the Board or the Attorney General for the personal services costs of their respective staffs. Expenses for outside consultants and attorneys and any other costs shall not be incurred by the Board without the prior written approval of Boulder.

CALL FOR ADMINISTRATION

11. The Board hereby authorizes Boulder to be its agent for administration and monitoring in the specified reach of the 1974 right, the Berkley Ditch right, the conveyed water rights, and the water assigned to the Board pursuant to paragraph 4 of this Agreement.

12. As the Board's agent, Boulder shall be responsible for monitoring all gauges on Boulder Creek within the specified reach. If the stream flow at any monitored point in the specified reach is less than 15 c.f.s. at any time, then Boulder shall contact the water commissioner or division engineer on the Board's behalf and call for the administration of the legally authorized instream flows. Boulder shall immediately report to the Board any controversy or problem with the administration of instream flows which it believes are legally authorized.

13. Boulder shall be responsible for maintaining all records necessary for the implementation of this Agreement, using forms mutually agreeable to the parties, and all records required by the division engineer for administration of instream flows in the specified reach.

14. Boulder shall provide an annual report to the Board on the operation of this Agreement, the actions taken by it as the Board's agent and its planned operations for the forthcoming

year. Said report shall be due on January 1 of each year and cover actions taken during the preceding year and planned operations for the forthcoming year.

15. All costs incurred by Boulder in acting as the Board's agent shall be borne by Boulder.

16. Upon 30 days advance written notice to Boulder, the Board may, in its sole discretion, revoke this authorization for Boulder to act as its agent; provided, however, that if the Board revokes this authorization then it must assume at its own expense responsibility for the administration and monitoring for which paragraphs 12 and 13 call.

MISCELLANEOUS PROVISIONS

17. This Agreement shall not be otherwise assignable by either party without the written consent of the other.

18. All of the provisions of this Agreement shall survive the closing of the conveyance required by paragraphs 1 and 2 and shall not merge therewith.

19. This Agreement shall be a covenant which runs with the conveyed water rights and it shall be recorded by Boulder with the Clerk and Recorder of Boulder County, Colorado, with a conformed copy provided by Boulder to the Board.

20. The Board may not sell, lease, transfer, or otherwise dispose of its interests in the conveyed water rights or the assigned water without prior written consent of Boulder.

21. Any obligation for the continued payment of ditch company assessments or other costs of ownership associated with the conveyed water rights shall be borne by Boulder.

ENFORCEMENT

22. Pursuant to section 37-92-102(3), C.R.S. (1989 Supp.), the terms of this Agreement shall be enforceable by each party as a water matter in the District Court for Water Division No. 1; provided, however, that before commencing any action for enforcement of this Agreement, the party alleging violation shall notify the other party in writing of the alleged violation and the parties shall make a good faith effort to resolve their differences through informal consultation.

23. Specific performance of this Agreement shall be the exclusive remedy for failure of either party to comply with any provision of this Agreement.

IN WITNESS WHEREOF, the Board and Boulder have executed
this Agreement as of the 20th day of July, 1990.

CITY OF BOULDER, COLORADO

By: [Signature]
City Manager

COLORADO WATER CONSERVATION BOARD

By: [Signature]
J. William McDonald, Director
Colorado Water Conservation
Board

1313 Sherman Street, Rm. 721
Denver, Colorado 80203

Attest:

[Signature]
Director of Finance and Record
Ex-Officio City Clerk

Approved as to form:

[Signature]
City Attorney

EXHIBIT A

DEED

This deed is made this ____ day of _____, 1990 by the City of Boulder, Colorado, a Colorado municipal corporation (hereinafter the "City"), to the Colorado Water Conservation Board, an agency of the State of Colorado (hereinafter the "Board").

Subject to reservations hereinafter contained, the City hereby conveys for due and sufficient consideration all of its right, title and interest in the following-described water rights (the "conveyed water rights"):

Farmers Ditch, 13.52 cfs out of 73.29 cfs total decreed, appropriation date October 1, 1862;

Anderson Ditch, 1.81 cfs out of 25 cfs total decreed, appropriation date October 1, 1860;

Smith and Goss Ditch, 0.4 cfs out of 44.3 cfs total decreed, appropriation date November 15, 1859;

McCarty Ditch, 0.64 cfs out of 5.00 cfs total decreed, appropriation date June 1, 1862.

Harden Ditch, 1.8 cfs out of 21.0 cfs total decreed, appropriation date June 1, 1862.

All originally decreed by the District Court in and for Boulder County on June 2, 1882, and changed from irrigation to municipal use by decree of the Water Court, Water Division No. 1 in Case Nos. W-7569, W-7570 and W-8520-77, entered May 31, 1989.

The Board shall use the described water rights solely to maintain an instream flow not exceeding 15 cfs in the specified reach of the mainstem of Boulder Creek in Boulder County from the Public Service Company's hydroelectric plant outlet at Orodell (NE 1/4, SW 1/4, Section 34, Township 1 North, Range 71 West of the 6th P.M.) to the 75th Street Bridge (SW 1/4, Section 13, Township 1 North, Range 70 West of the 6th P.M.) (the "specified reach"). The conveyance of the foregoing water rights are subject to the following reservations by the City:

- a. The City reserves the right to use water available under the conveyed water rights for its municipal purposes in the event of extraordinary drought conditions or of emergency conditions involving the loss of water to its municipal system as a result of catastrophic events (such as failure of conveyance or treatment facilities); provided, however, that extraordinary drought conditions or emergency

conditions shall be deemed to exist only if Boulder has implemented a conservation program in response to such drought or emergency which significantly restricts lawn watering and other outdoor uses and only if Boulder has diverted and used the full amount of water available under all of its direct flow water rights other than the conveyed water rights;

- b. The City reserves the right to use water available under the conveyed water rights for municipal purposes at any time it may do so without reducing the flow in the specified reach below 15 cfs; and
- c. The City reserves the exclusive right to use water available under the conveyed water rights for any legally permissible use, re-use or lease for irrigation purposes downstream from the specified reach.

IN WITNESS WHEREOF, this Deed has been executed by the City and accepted by the Board as of the date first stated above.

CITY OF BOULDER

ATTEST:

By


City Manager


Director of Finance and Record
Ex-Officio City Clerk

DELIVERY AGREEMENT

The Colorado Water Conservation Board ("CWCB"), an agency of the State of Colorado, and the City and County of Denver, acting by and through its Board of Water Commissioners ("Denver Water"), a Colorado home rule municipal corporation of the State of Colorado, in consideration of the mutual promises contained herein, agree as follows:

RECITALS

- A. Denver Water is a home rule municipal corporation created and existing under the Charter of the City and County of Denver and other applicable Colorado law. Denver Water is responsible to maintain a water works system necessary to supply the needs of the City and County of Denver and numerous suburban contract distributors with water for all uses and purposes.
- B. Colorado Water Conservation Board is an agency of the State of Colorado created to aid in the protection and development of the waters of the state for the benefit of the present and future inhabitants of the state. In 1973, the General Assembly vested the CWCB with the exclusive authority to appropriate waters of natural streams for minimum stream flows to preserve the natural environment to a reasonable degree for instream flow purposes between specific points.
- C. In 1982, Denver Water completed the construction of Strontia Springs Intake and Reservoir on the South Platte River in Waterton Canyon. As part of the necessary permitting for the project, the United States Bureau of Land Management and Forest Service required Denver Water to prepare and operate a water management plan for flows in Waterton Canyon between Strontia Springs Dam and Chatfield Reservoir measured at the USGS South Platte at Waterton Canyon gage ("Water Management Plan").
- D. Pursuant to the Water Management Plan required by its federal right-of-way with the United States Bureau of Land Management (USBLM) (C-099597) and easement issued on August 16, 1978 by the United States Forest Service for the Foothills Project, except in the case of drought, Denver Water must manage water flows in the South Platte River from Strontia Springs Dam to Chatfield Reservoir ("Waterton Reach") as to provide average daily flows of 60 cubic feet per second (cfs) from May 15 to September 15 of each year, and 30 cfs from September 16 to May 14 of the next year thereafter. However, Denver Water may divert from those flows at the point of diversion of the Platte Canyon/Last Chance Ditch, approximately 3,000 feet upstream from the United States Geological Survey's

Waterton gaging station, no more than 15 cfs, of the total of 30 cfs average daily flows required to be provided, during the period from September 16 of each year to May 14 of the next year thereafter.

- E. In 2004, the USFS amended the Water Management Plan to provide “[Denver Water] will so manage water flows in the South Platte River from Strontia Springs Dam to Chatfield Reservoir as to provide average daily flows of 60 cubic feet per second (“cfs”) from May 15th to September 15th (“Summer Period”) of each year and average daily flows of 30 cfs from September 16th to May 14th (“Winter Period”) of the next year thereafter, except that [Denver Water] may divert and recover 15 cfs of the 30 cfs winter flows at the Old Last Chance Ditch diversion during the Winter Period to keep the water level in Chatfield between 5,427 feet (the summer recreation level) and 5,423 feet (the non-recreation level) such that storage capacity in Chatfield Reservoir is available when needed. The flows between Strontia Springs Dam and the old Last Chance Ditch diversion shall not go below 60 cfs during the Summer Period or 30 cfs during the Winter Period.”

Section II, ¶2. was also amended to provide “In the event of severe drought conditions [Denver Water] may reduce water flows between the Old Last Chance Ditch diversion and Chatfield Reservoir during the Summer Period. Diversion and recovery of these flows will be in proportion to the level of drought response declared by [Denver Water] when imposing water restrictions on its customers

- During Stage 1 drought response, as defined by voluntary water restrictions, [Denver Water] may divert and recover 15 cfs of the 60 cfs at the Old Last Chance Ditch diversion. Leaving 45 cfs in the stream channel.
- During Stage 2 drought response, defined by mandatory watering restrictions, [Denver Water] may divert and recover 30 cfs of the 60 cfs at Old Last Chance Ditch diversion, leaving 30 cfs in the stream channel.
- During Stage 3 response, as defined by the total constraint of outdoor lawn watering, [Denver Water] may recover 45 cfs of the 60 cfs at the Old Last Chance Ditch diversion, leaving 15 cfs in the stream channel.

The flows between the Old Last Chance Ditch diversion and Chatfield shall not go below 15 cfs during the Summer Period.”

- F. When natural flow and river administration would otherwise cause flow to drop below these flow thresholds, Denver Water supplements the flow by releasing water held in Strontia Springs Reservoir from various sources. Denver Water then recaptures water from these releases in Chatfield Reservoir and other downstream storage facilities. At times, available downstream storage capacity is insufficient

to recapture releases from Strontia Springs Reservoir. Denver requires a junior water right in such circumstances in order to protect the water released to meet the flow thresholds under the Water Management Plan.

- G. In Case No. 2005CW316, Water Division No. 1 Denver Water filed for a determination of water right for water rights adjudicated in Case Nos. 80CW406 and 87CW116 and a junior storage water right application to satisfy and fulfill the requirements of the Water Management Plan, including storage and piscatorial uses, to provide average daily flows of 60 cfs from May 15 to September 15 and average daily flows of 30 cfs from September 16 to May 14 from Strontia Springs Dam to Chatfield Reservoir. This agreement only applies to the junior storage water right.
- H. The CWCB opposed Denver Water's water right application in Case No. 2005CW316.
- I. The CWCB and Denver Water wish to cooperate in maintaining the flows required by the Water Management Plan in the Waterton Reach of the South Platte River from Strontia Springs Dam to Chatfield Reservoir as described previously.
- J. Pursuant to section 37-92-102(3), C.R.S. (2012), the CWCB may acquire by contractual agreement with any governmental entity such water, water rights or interests in water that are not on the Division Engineer's abandonment list in such amount as the CWCB determines is appropriate for stream flows to preserve the natural environment to a reasonable degree. Pursuant to Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program, 2 CCR 408-2, on January 28, 2013, the CWCB found that Denver Water's deliveries of water under this Agreement of up to 60 cubic feet per second (cfs) from May 15 to September 15 of each year and up to 30 cfs from September 16 to May 14 of the next year, except as otherwise provided under the Water Management Plan and 2004 amendment, are appropriate for stream flows to preserve the natural environment in these stream reaches to a reasonable degree.

NOW THEREFORE, the CWCB and Denver Water agree as follows:

DELIVERY

- 1. Subject to the terms of this agreement, Denver Water will release and deliver water stored under its junior water storage right associated with its Water Court application in Case No. 05CW316, in Water Division No. 1 ("Strontia WMP Storage Right") for exclusive use by the CWCB to maintain instream flows to preserve the

natural environment in the Waterton Reach of the South Platte River between Strontia Springs Dam and the inlet of Chatfield Reservoir or Platte Canyon/Last Chance Ditch, as generally depicted on the map attached hereto as Exhibit A, when such releases are required to meet the minimum flows set forth in the Water Management Plan and any amendments to that plan.

2. The water stored and released under the Strontia WMP Storage Right will be decreed for the fulfillment of the Water Management Plan including storage and piscatorial uses, and for instream flow use exclusively by the CWCB in the Waterton Reach as described above.

3. CWCB shall protect the delivered water through the Waterton Reach and, if necessary, will request administration to prevent diversion of the water by other water users.

CONDITIONS OF THE CWCB'S USE OF THE STRONTIA STORAGE RIGHTS

4. The release and delivery of water from the Strontia WMP Storage Right in no way provides the CWCB operating interest or ownership in Denver Water's facilities or other water rights as they exist now, or may exist in the future.

5. The CWCB shall use the Strontia WMP Storage Right solely to maintain the flow in the Waterton Reach of the South Platte River between Strontia Springs Dam and the inlet of Chatfield Reservoir or the Platte Canyon/Last Chance Ditch to preserve the natural environment, consistent with Denver Water's Water Management Plan, as it is currently or as it may be amended in the future.

6. The CWCB's exclusive rights in the Waterton Reach under this agreement extend to and terminate at the downstream terminus of the Waterton Reach as defined in the Water Management Plan and 2004 Amendment.

7. The CWCB shall not alter or amend any provision in the Water Management Plan or any amendments thereto. Further, the CWCB shall not support the efforts of other persons or entities that attempt to amend the Water Management Plan.

USE OF THE SUBJECT WATER RIGHT BELOW THE SPECIFIED REACH

8. Below the downstream terminus of the Waterton Reach, the water associated with the Strontia WMP Storage Right reverts back to waters of the State of Colorado and is available for diversion for any legal beneficial use.

WATER COURT PROCEEDINGS

9. The CWCB will stipulate to a proposed decree containing terms and conditions that such water will be used for instream flow purposes exclusively by the CWCB in accordance with the decree and this agreement.

CALL FOR ADMINISTRATION

10. Denver Water shall be responsible for maintaining all records necessary for the implementation of this Agreement, using forms mutually agreeable to the parties, and all records required by the division engineer for administration of instream flows in the reach of the South Platte River between Strontia Springs Dam and the inlet of Chatfield Reservoir.

11. Denver Water will provide accounting related to the operation of this Agreement to the CWCB upon request. Such request should be made electronically to Denver Water's Raw Water Supply section by email to RawWaterSupply@denverwater.org or by mail to

Raw Water Operations, MC: 411
1600 West 12th Avenue
Denver, Colorado, 80204

Denver Water will notify the CWCB if the requests should be directed to a different email address.

MISCELLANEOUS PROVISIONS

12. This Agreement shall not be otherwise assignable by either party without written consent of the other.

13. Pursuant to section 37-92-102(3), C.R.S. (2011), the terms of this Agreement shall be enforceable by each party as a water matter in the district Court for Water Division No. 1; provided, however, that before commencing any action for enforcement of this Agreement, the party alleging violation shall notify the other party in writing of the alleged violation and the parties shall make a good faith effort to resolve their differences through informal consultation.

14. Specific performance of this Agreement shall be the exclusive remedy for failure of either party to comply with any provision of this Agreement.

15. This Agreement shall be construed in accordance with the laws of the State of Colorado and shall be interpreted broadly to affect its purposes.

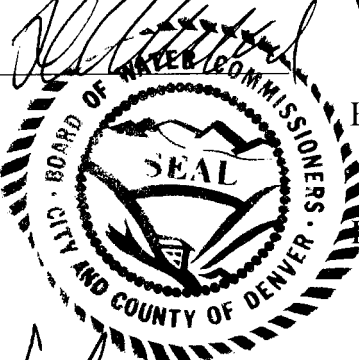
16. Should any conflict appear to exist between this Agreement and the Water Management Plan, the Agreement should be construed in a manner consistent with the Water Management Plan or any amendments thereto.

IN WITNESS WHEREOF, the CWCB and Denver Water have executed this Agreement as of the last date of execution.

ATTEST:

THE CITY AND COUNTY OF DENVER,
acting by and through its BOARD OF
WATER COMMISSIONERS

BY: [Signature]
SECRETARY

The seal is circular with a double-lined border. The outer ring contains the text "CITY AND COUNTY OF DENVER" at the bottom and "BOARD OF WATER COMMISSIONERS" at the top. In the center is a shield with a mountain range, a river, and a sun. Below the shield is the word "SEAL".

BY: [Signature]
PRESIDENT

DATE: 2/13/13

APPROVED:
BY: [Signature]
DIRECTOR OF PLANNING

REGISTERED AND COUNTERSIGNED:
Auditor
CITY AND COUNTY OF DENVER
By _____

APPROVED AS TO FORM:
BY: [Signature]
LEGAL DIVISION

COLORADO WATER CONSERVATION
BOARD

BY: [Signature]
DIRECTOR

DATE: 2/15/13

GRANT OF FLOW RESTORATION USE

This GRANT OF FLOW RESTORATION USE (this "Grant") dated this 23rd day of April, 2015, is between the COLORADO WATER TRUST (the "Trust"), a Colorado nonprofit corporation, and the COLORADO WATER CONSERVATION BOARD (the "Board"), an agency of the State of Colorado (sometimes collectively referred to herein as the "Parties").

1. The Water Rights. The following water rights were decreed to the McKinley Ditch that is located or irrigates land in the Counties of Montrose and Gunnison, and were conveyed to the Trust by Special Warranty Deed dated January 6, 2014, which was recorded in the real property records of Gunnison County, Colorado on January 15, 2014, at Reception No. 625180 and in the real property records of Montrose County, Colorado on January 29, 2014, at Reception No. 853303. The Trust owns an undivided 18.75% in each of the following priorities ("Water Rights"):

- Priority 56, decreed in Civil Action No. 1319, District Court, Montrose County, March 28, 1904 for 12.17 cfs
- Priority 125, decreed in Civil Action No. 1745, District Court, Montrose County, May 8, 1913 for 3.125 cfs
- Priority 128, decreed in Civil Action No. 1745, District Court, Montrose County, May 8, 1913 for 3.125 cfs
- Priority 285, decreed in Civil Action No. 4742, District Court, Montrose County, April 21, 1941 for 12.58 cfs

The Water Rights were subsequently changed by decree in Case No. 05CW132 dated May 30, 2008 and by decree in Case No. 12CW52 dated February 15, 2013, District Court, Water Division 4.

2. Grant. Subject to the covenants and reservations hereinafter contained, the Trust, for due and sufficient consideration, the receipt and sufficiency of which are hereby acknowledged, does hereby grant to the Board the permanent right to use the Water Rights to preserve and/or improve the natural environmental to a reasonable degree (the "Grant") in the following stream reaches for the following purposes:

- a. Instream flow use ("Full Season Instream Flow Use") exclusively by the Board for the entire irrigation season to preserve and/or improve the natural environment to a reasonable degree in the following stream reaches (the "Instream Flow Reaches):
 - i. Little Cimarron River from the McKinley headgate downstream to its confluence with the Cimarron River.



ii. Cimarron River from its confluence with the Little Cimarron River downstream to its confluence with the Gunnison River.

- b. A split-season arrangement ("Split-Season Use"), where during a single irrigation season, the Water Rights are used for irrigation in the first part of the irrigation season and then instream flow exclusively by the Board for the remain of the irrigation season to preserve and/or improve the natural environment to a reasonable degree in the Instream Flow Reaches.

3. The Parties intend that the Grant shall run with the Water Rights and shall burden the Trust's successors and assigns.

4. Change Case. The Parties recognize the need to obtain a change of the Water Rights to allow the desired use of the Water Rights for instream flow purposes as contemplated herein. Pursuant to the Water Rights Acquisition Agreement dated April 9, 2015 between the Parties regarding the Water Rights, the Parties will file as co-applicants an application for such a change with the District Court in and for Water Division No. 7 ("Change Case"). This Grant shall be subject to any terms and conditions of the Change Case decree. If the Change Case is denied, in whole or in part, for any reason, or is conditioned in such a manner as to prevent the purposes of this Grant from being fulfilled, the Parties shall consult with each regarding the use of the Water Rights.

5. Annual Operation. The Parties agree that Split-Season Use is the preferred use of the Water Rights in any given year. Recognizing that Split-Season Use may not be feasible or desirable by the Parties in every year, the Trust and the Board agree that in the following circumstances, full season irrigation or Full Season Instream Flow Use may occur under the following circumstances (the "Special Circumstances"):

a. Full season irrigation may occur if the Parties agree that:

- i. projected climatological conditions are such that there is no need to use the Water Rights to preserve and/or improve the natural environment in the Instream Flow Reaches; or
- ii. there is a land management issue that requires full season irrigation, such as re-vegetation of the historically irrigated land; or
- iii. there is an unanticipated or pressing situation that renders full season irrigation necessary.

b. Full Season Instream Flow Use may occur if the Parties agree that:

- i. projected climatological conditions are such that there is a need for the use of the Water Rights for Full Season Instream Flow Use to preserve and/or improve the natural environment in the Instream Flow Reaches; or
- ii. circumstances make irrigation impractical, including unavailability of a lessee for irrigation; or
- iii. there is an unanticipated or pressing situation that renders Full Season Instream Flow Use necessary.

The Parties agree to consult before April 1 of each year to determine whether any Special Circumstances exist and to discuss the use of the Water Rights during the upcoming irrigation season. If no Special Circumstances exist, and the Parties do not agree on whether to begin instream flow use on July 1 or August 1, the Parties shall hire a mediator to assist them in reaching agreement by the start date. Subject to the availability of funds, the Parties shall split the cost of the mediator.

6. Irrigation Use. Under either Full Season Irrigation or Split-Season Use scenario, the Trust shall have the right to allow the use (by lease or otherwise) of the Water Rights for the period in question to irrigators under the McKinley Ditch or other ditches below the McKinley Dam for irrigation use, for such consideration and on such terms as the Trust desires, provided there is no diminishment of yield to the Water Rights for instream flow or injury to existing instream flow water rights, to the satisfaction of CWCB. The Board shall have no responsibilities and bear no costs for such irrigation use of the Water Rights. Under the Split-Season Use scenario, the Trust shall coordinate all aspects of the irrigation use, including the switch from irrigation to instream flow use.

7. Administration. Pursuant to 2 CCR 408(2)(10), the Board hereby authorizes the Trust to be the CWCB's agent for administration and monitoring of the instream flow use of the Water Rights. If the stream flow at any monitored point falls below the decreed instream flow amount provided by the Water Rights, the Trust shall notify the staff of the Board. Upon consultation with the Trust and the Division of Water Resources, the staff of the Board shall place a call for administration of the Water Rights if appropriate. The Trust shall provide an annual report to the Board regarding the use of the Water Rights each year and the actions taken by the Trust as the Board's agent. Such report shall be due on or before December 31st of each year.

8. Injury with Mitigation. If the Board and Trust successfully obtain a decree in the Change Case, the Board commits to use the Water Rights, as changed, for instream flow purposes to preserve and/or improve the natural environment to a reasonable degree, consistent with the terms of the decree and this Grant, and to take all reasonable steps to enforce those rights for instream flow purposes and protect them from injury. If the Board receives a request to consider injury with

mitigation for the portion of the Little Cimarron River and/or Cimarron River benefited by the change of the Water Rights, the Board shall promptly inform the Trust of such request, consult with the Trust regarding such request, and not take any action that, in the Trust's reasonable judgment, would impair the benefits to the Little Cimarron River and/or Cimarron River resulting from the Trust's Grant to the Board of the Water Rights and their change to add instream flow uses.

9. Stream Gages. Subject to the availability of funds, the Board shall be solely responsible for the installation and maintenance of any stream gages within the Instream Flow Reaches that are required by law or needed to exercise the instream flow uses added to the Water Rights. The Board shall consult with the Trust regarding the type, location, and other aspects of the gages.

10. Reserved Rights. The Grant is subject to the following rights that are expressly reserved to the Trust:

- a. the right to use the Water Rights for irrigation purposes pursuant to Section 4 above; and
- b. the right to bring about, by lease or otherwise, the beneficial use of the historical consumptive use of the Water Rights as fully consumable water downstream of the Instream Flow Reaches, pursuant to 37-92-201, C.R.S., subject to such terms and conditions as the Water Court deems necessary to prevent injury to vested water rights or downstream conditional water rights.

11. Enforcement. The Parties agree that the exclusive venue and jurisdiction of any action pertaining to the interpretation or enforcement of this Grant shall be in the District Court, Water Division No. 4, to the extent permitted by law. If jurisdiction or venue is not proper in the water court, it is agreed that the exclusive venue and jurisdiction of any action pertaining to the interpretation or enforcement of this Grant shall be in the District Court of Gunnison County, Colorado. Before commencing any action for enforcement of this Grant, the party alleging a breach shall notify the other party in writing of the alleged breach and the Parties shall make a good faith effort to resolve their differences through informal consultation. Specific performance shall be the exclusive remedy for failure of either party to comply with any provision of this Grant.

12. Right of First Refusal. In the event the Trust begins actively marketing the Water Rights, the Trust will give the CWCB notice within two (2) weeks of the commencement of such activity. The Trust hereby grants to the Board a right of first refusal to purchase all or a portion of the Water Rights in the event the Trust seeks to convey these interests to a third party. Upon receipt of an offer to purchase that the Trust may accept, the Trust shall give the Board at least one hundred twenty (120) days' notice of the Trust's intention to transfer or convey the Water Rights by delivering to the Board a bona fide written offer to purchase made by a third party.



During the one hundred twenty (120) day notice period, the Board shall enjoy its right of first refusal, entitling it to purchase the Water Rights proposed for sale. If within one hundred twenty (120) days following notice by the Trust of the Trust's intention to sell the Water Rights, the Board chooses to exercise its right to purchase, the purchase price of the Water Rights shall be the fair market price of the Water Rights prevailing at the time of the offer. Provided that the Board notifies the Trust within one hundred twenty (120) day notice period of its intent to exercise its right to purchase, the Trust shall cooperate with the Board to allow sufficient time to complete the purchase of the Water Rights. In the event that the Board decides not to exercise its right to purchase the Water Rights offered for sale, the Trust shall be free to sell the Water Rights to the third party. In any sale to a third party, the Trust shall, as a part of that conveyance, require the third party purchaser to abide by the terms of this Grant.

IN WITNESS WHEREOF, the Trust and the Board have executed this Grant on the date set forth above.

COLORADO WATER TRUST

COLORADO WATER CONSERVATION BOARD

By: Romyr2cat

Amy Beatie

Executive Director

By: [Signature]

Name: James Eklund

Title: Director



STATE OF COLORADO)
) ss.
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 23 day of April, 2015, by Amy Beatie, as Executive Director of the Colorado Water Trust, a Colorado nonprofit corporation.

Witness my hand and official seal.

Mara Mackillop
Notary Public

My commission expires: January 23, 2019

STATE OF COLORADO)
) ss.
COUNTY OF Denver)



The foregoing instrument was acknowledged before me this 23 day of April, 2015, by James Eklund, as Director of the Colorado Water Conservation Board, an agency of the State of Colorado.

Witness my hand and official seal.

Mara Mackillop
Notary Public

My commission expires: January 23, 2019



Brendon Langenhuizen, P.E.

Director of Technical Advocacy, Colorado River Water Conservation District
201 Centennial Street, Suite 200, Glenwood Springs, CO 81601

EDUCATION:

Gonzaga University ~ *Graduated May 2005*
B.S. Degree in Civil Engineering (focus on water resources)

Spokane, WA 99258

PROFESSIONAL REGISTRATIONS:

- **Colorado Professional Engineering License** ~ Civil/Water Resources P.E. License No. 44339

EMPLOYMENT:

- October 2020 – Present: **Colorado River Water Conservation District** ~ Glenwood Springs, CO. Director of Technical Advocacy. Mr. Langenhuizen oversees Colorado intrastate engineering matters such as water rights, water resource stewardship, and river administration. He provides technical analysis on related research, studies, and policy related to water rights, river operations, natural resource management, grant programs, watershed planning, water-quality, and endangered species compliance. Additionally, Mr. Langenhuizen leads the technical analysis for new agreements, new policies, water court proceedings for the District as well as oversight and review of conditions and operations in the District's existing agreements and water court decrees, particularly related to Colorado River administration and transmountain diversion operations.
- October 2013 -September 2020: **SGM** ~ Glenwood Springs, CO. Senior Engineer I - Water Resources Team Lead and Project Manager. Mr. Langenhuizen served as a Water Resources Team Leader and Project Manager for multidisciplinary projects, including: water rights engineering in Water Divisions Nos. 2, 4, 5, and 6; water allocation modeling using Excel-based and StateMod platforms; water policy facilitation in Water Division No. 5; and water resources design. Among other notable projects, Mr. Langenhuizen was a project manager of the initial Colorado Basin Roundtable (CBRT) Basin Implementation Plan (BIP). His clients were made up of agricultural producers, small businesses, local governments, municipal water providers, and state entities. Mr. Langenhuizen was twice qualified as an expert witness and provided expert testimony before the Water Division No. 6 water court.
- May 2006 – July 2012: **Wright Water Engineers (WWE)** ~ Glenwood Springs, CO. Water Resource Engineer. Mr. Langenhuizen provided project management and water rights engineering support for west slope water users representing a broad spectrum of water uses and demands including municipal, industrial, agricultural and environmental/recreational. He developed water supply and infrastructure planning analyses, surface water and groundwater allocation modeling, and water use and demand forecasting/planning. Mr. Langenhuizen prepared engineering reports for water court settlement negotiations. Additionally, he drafted stormwater management plans and performed construction observations.

SKILLS, TRAININGS, & RELEVANT EXPERIENCES:

- Mastery of Microsoft Office Suite, Microsoft Project, ArcGIS, CDSS, StateMod, StateCU.
- Experience with IDS AWAS, AutoCAD, Innovyze, FlowTracker, Bluebeam, Vision.
- *March – September 2018:* Completed the Water Education Colorado's Water Leaders Program.
- *Wright Palaeohydrological Institute* – Led a team during a field visit at Hovenweep National Monument to explore potential stormwater runoff into hypothesized reservoir site.

PROFESSIONAL ACTIVITIES:

- *2015 –2020:* City of Glenwood Springs River Commissioner (Chair from 2016 through 2019)
- *2024 – Present:* Colorado River Basin Roundtable Voting Member
- *2012:* American Council of Engineering Companies (ACEC) "New Face in Engineering"
- *2011:* Garfield County Young Adult Humanitarian Award Nominee

EXPERT TESTIMONY:

- Case No. 14CW3037, Deposition, Water Division 6, Basalt, CO, October 9, 2019. Williams Fork East, LLC, Application for Determination of Conditional Surface Water Rights.
- Case No. 14CW3037, Expert Trial Testimony, Water Division No. 6, Steamboat Springs, CO, November 18-20, 2019. Williams Fork East, LLC, Application for Determination of Conditional Surface Water Rights.
- Case No. 15CW3006, Deposition, Water Division No. 6, Basalt, CO, October 9, 2019. Cross Mountain Ranch Limited Partnership and Cyclone Ranch, LLC, Application for Surface Water Right.
- Case No. 15CW3006, Expert Trial Testimony, Water Division No. 6, Steamboat Springs, CO, November 21-22, 2019. Cross Mountain Ranch Limited Partnership and Cyclone Ranch, LLC, Application for Surface Water Right.