



— BUREAU OF —  
RECLAMATION

# **Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead**

**System Conservation Pilot Program, Upper Colorado Basin Region  
Pilot System Conservation Program, Lower Colorado Basin Region**

## **Mission Statements**

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

# **Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead**

*Prepared for:*

**United States Congress**

*Prepared by:*

**U.S. Department of the Interior  
Bureau of Reclamation**

*Citation:*

*Reclamation, Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead*





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# Acronyms and Abbreviations

\$	Dollars
2007 Interim Guidelines	<i>Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead</i> , December 2007
AF	Acre-feet (acronym used in Tables; otherwise spelled out)
AOP	<i>Annual Operating Plan For Colorado River Reservoirs</i>
BHC	Bullhead City, Arizona
Basin Project Act	Colorado River Basin Project Act, Pub. L. No. 90-537, 80 Stat. 885 (1968)
CAP	Central Arizona Project
CAWCD	Central Arizona Water Conservation District
CRIT	Colorado River Indian Tribes
CRSP	Colorado River Storage Project
CRSPA	Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956)
Consolidated Decree	The Consolidated Decree entered by the Supreme Court of the United States in <i>Arizona v. California</i> , 547 U.S. 150 (2006)
CVWD	Coachella Valley Water District
DCP	Colorado River Drought Contingency Plan
DCP Act	Colorado River Drought Contingency Plan Authorization Act, Pub. L. No. 116-14, dated April 16, 2019
DW	Denver Water
EDF	Environmental Defense Fund, Inc.
EQIP	Environmental Quality Incentives Program, NRCS, USDA
FMYN	Fort McDowell Yavapai Nation
FOIA	Freedom of Information Act, 5 U.S.C. § 552 (2012), as amended
Facilitation Agreement	Agree to Facilitate the System Conservation Pilot Program in the Upper Colorado River Basin, dated May13, 2015
Funding Agreement	Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use, dated July 30, 2014, as amended
FY	Fiscal Year
GRIC	Gila River Indian Community
IBWC	International Boundary and Water Commission
LCROP	Lower Colorado Operations Program
LROC	Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs, dated June 4, 1970, as amended March 21, 2005
Local Funding Agencies	Denver Water, SNWA, MWD, and CAWCD
Lower Basin	Lower Colorado River Basin
MOU	Memorandum of Understanding
Mexican Water Treaty	Utilization of Water of the Colorado and Tijuana Rivers and of the Rio Grande, Treaty Between the United States of America and Mexico, signed on February 3, 1944, 59 Stat. 1219

## Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

METRIC	Mapping Evapo-Transpiration with high Resolution and Internalized Calibration, developed by University of Idaho
Mexico	United Mexican States
msl	Mean Sea Level
MWD	The Metropolitan Water District of Southern California
Needles	City of Needles, California
NGO	Non-governmental Organization
NRCS	Natural Resources Conservation Service, USDA
Pilot Program	Pilot System Conservation Program and System Conservation Pilot Program
PSCP	Pilot System Conservation Program, Lower Colorado Basin Region
Pub. L. No.	Public Law
REGC	River's Edge Golf Course
RCPP	Regional Conservation Partnership Program, NRCS, USDA
Rebate Program	CVWD Furrow/Flood to Drip Conversion Rebate Program
Reclamation	Bureau of Reclamation
RFP	Request for Proposal
SCIA	System Conservation Implementation Agreements
SCPP	System Conservation Pilot Program, Upper Colorado Basin Region
Secretary	Secretary of the United States Department of the Interior
SNWA	Southern Nevada Water Authority
Stat.	Statutes
TON	Tohono O'odham Nation
TNC	The Nature Conservancy
TU	Trout Unlimited
UCRC	Upper Colorado River Commission
UCROP	Upper Colorado River Operations Program
Upper Basin	Upper Colorado River Basin
USBR	Bureau of Reclamation
U.S.C.	United States Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
Water Year	October 1 through September 30
WFF	Walton Family Foundation
WWTP	Waste Water Treatment Plant, Bullhead City, Arizona





# **Executive Summary**

## **Background**

The Colorado River and its tributaries are one of the most important natural resources in the United States. Approximately 1,400 miles long, flowing through the seven western states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and the United Mexican States (Mexico), the Colorado River System provides immeasurable economic and ecological values. The Colorado River provides drinking water to tens of millions of people, irrigates millions of acres of crops, produces billions of kilowatt-hours of hydroelectricity annually, flows through national parks and recreation areas visited by millions of people annually, and provides habitat for fish and wildlife.

In 2013, in response to a Colorado River System drought that has been ongoing since 2000, the Secretary of the Interior (Secretary) encouraged the Colorado River Basin States to develop drought contingency plans. In 2014, the Bureau of Reclamation (Reclamation), the Colorado River Basin States, and Colorado River water users explored ideas that could mitigate the impacts of the ongoing drought in the Colorado River Basin. One idea that received broad support was funding projects to test a wide range of measures to reduce consumptive use and/or losses and conserve water in Lake Powell or Lake Mead as Colorado River System water for the benefit of all users to help offset declining reservoir elevations. Lessons learned from testing new water conservation measures could be incorporated into long-term drought contingency planning and programs that reduce consumptive use or losses of Colorado River water, often referred to as demand management programs. Negotiations on an agreement to establish and implement a conservation program in the Colorado River Basin occurred among the United States Department of the Interior, Reclamation, and municipal water agencies.

## **Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use, Colorado River Basin (Pilot Program)**

On July 30, 2014, Reclamation executed an agreement with the Central Arizona Water Conservation District (CAWCD), the Southern Nevada Water Authority (SNWA), The Metropolitan Water District of Southern California (MWD), and Denver Water which are collectively referred to as the Local Funding Agencies, for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use, as amended (Funding Agreement). The Funding Agreement is historic because water agencies from both the upper and lower Colorado River Basins and Reclamation agreed to jointly fund voluntary water conservation projects in the Colorado River Basin to benefit the Colorado River System.

The Funding Agreement provided that in the lower Colorado River Basin (Lower Basin) Reclamation would enter into agreements for Pilot Program projects in the Lower Division States of Arizona, California, and Nevada and provided that the Upper Division States of Colorado, New Mexico, Utah, and Wyoming would determine the Contracting Entity for the upper Colorado River Basin (Upper Basin). The Upper Division States through their Commissioners on the Upper Colorado River Commission (UCRC) recognized that the UCRC should serve as the Upper Basin Contracting Entity. The UCRC, Reclamation and the Local Funding Agencies entered into an agreement on May 13, 2015, to provide that the UCRC be the Contracting Entity in the Upper Basin.

On July 6, 2018, Reclamation and the Local Funding Agencies amended the Funding Agreement to allow an entity that was not a party to the Funding Agreement to participate on a one-year renewable basis as a “Third-Party Contributor” in funding Pilot Program costs and participating in review of Pilot Program project proposals to create system conservation. In calendar year 2018 and calendar year 2019, the Environmental Defense Fund, Inc. (EDF) participated as a Third-Party Contributor with funding contributed by the Walton Family Foundation.

The Pilot Program tested new approaches that reduce historic water use or losses and helped to determine if compensated, voluntary, and measurable reductions in consumptive use of Colorado River System water constitute a sufficiently cost-effective, robust, and feasible approach to partially mitigate the impacts of ongoing drought on the Colorado River System. Colorado River System water conserved through Pilot Program projects is for the sole purpose of increasing storage levels in Lakes Powell and Mead and will not accrue to the benefit or use of any individual user. Based on lessons learned from development, implementation, and evaluation of the Pilot Program, Reclamation and Colorado River System stakeholders intend to identify successful approaches that could be utilized on an expanded scale should Lakes Powell and Mead approach critical elevations.

## **Purpose and Scope of this Report**

This report was prepared by Reclamation on behalf of the Secretary in fulfillment of the requirements established in the Consolidated and Further Continuing Appropriations Act, 2015, Pub. L. No. 113-235, Division D, Title II, Section 206(d). Section 206(d) requires the Secretary to submit a report to Congress which evaluates the effectiveness of Pilot Program projects and recommends to Congress whether the activities undertaken by the Pilot Program projects should be continued.<sup>1</sup> Section 206(d) required the report to Congress to be submitted on September 30, 2018, however, new Pilot Program projects were being implemented in 2018 and 2019. The submission of the report to Congress was delayed to include discussion of additional experience and accomplishments gained through the end of calendar year 2019.

In accordance with Section 206(d), this report discusses the experience gained and findings reached by Reclamation, the Upper Division States, the Local Funding Agencies, and EDF

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<sup>1</sup> Pursuant to Section 206(d), the Secretary shall submit the report to the Committees on Appropriations and Natural Resources of the House of Representatives and the Committees on Appropriations and Energy and Natural Resources of the Senate.

which partnered with Reclamation to fund and participate in pilot projects to increase Colorado River System water in Lake Mead and the initial units of the Colorado River Storage Project (CRSP) reservoirs, which includes Lake Powell.<sup>2</sup> The report also presents an evaluation of the effectiveness of the Pilot Program based on volumes of water conserved, pilot project cost, average cost per acre-foot, impact to Colorado River System storage, administrative and technical challenges, and water user and public perception and receptiveness to participation in the Pilot Program.

The report is organized as follows:

- Section I. Pilot Program Background provides an introduction and overview of the Pilot Program in the context of Colorado River Basin geography, administration, hydrologic conditions, and water operations
- Section II. System Conservation Pilot Program Upper Basin (SCPP) describes implementation of the Pilot Program in the physical and institutional environment of the Upper Basin
- Section III. Pilot System Conservation Program Lower Basin (PSCP) describes implementation of the Pilot Program in the physical and institutional environment of the Lower Basin
- Section IV. Pilot Program Accomplishments describes the outcomes of the Pilot Program as a mechanism for testing long-term system conservation
- Section V. Findings and Recommendations includes lessons learned throughout the Colorado River Basin

From calendar year 2015 through 2018, 64 projects were implemented in the Upper Basin resulting in an estimated 47,280 acre-feet of Colorado River System water conserved in the Upper Basin at a cost of \$8.5 million or \$180.23 per acre-foot on average. From January 2015 through December 31, 2019 in the Lower Basin, 16 projects were implemented which will result in 175,347 acre-feet of Colorado River System water in Lake Mead by 2035, at a cost of approximately \$29.8 million or \$170.14 per acre-foot on average. The Pilot Program successfully demonstrated that voluntary, compensated water conservation projects can conserve water for Colorado River System storage to help mitigate the impacts of drought. Interest in Pilot Program participation among Upper and Lower Basin water users indicates potential for a long-term program to reduce consumptive use or losses at reasonable rates of compensation. Support for the Pilot Program grew in the Upper and Lower Basins in part due to the accessibility of information about the Pilot Program provided through: 1) dedicated webpages developed by Reclamation and the UCRC; and 2) significant community outreach and assistance in preparation of project proposals or applications by non-governmental organizations (NGO), such as The Nature Conservancy and Trout Unlimited in the Upper Basin, which increased the number of applications to the Pilot Program. In the Upper Basin, the volume of system conservation water that was delivered to Lake Powell is approximate because, among the Upper Division States, a common legal and accounting regime for tracking and accounting for the

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<sup>2</sup> Initial units of CRSP include Glen Canyon; Curecanti, later renamed Wayne N. Aspinall; Flaming Gorge; and Navajo.

volume of system conservation water arriving at Lake Powell does not exist. The Upper Division States, with funding assistance from Reclamation, are working to address water accounting issues in the Upper Basin. In the Lower Basin, legal mechanisms exist to prohibit water users from diverting system conservation water and the technical capability is present to verify the amount of system conservation water created.

## **Key Findings of this Report to Congress**

Any system conservation programs in the Upper and Lower Basins must be implemented and administered independently due to significant differences in the legal framework governing water use and rights and the hydrology of the two basins. System conservation programs in the two basins may have common goals, objectives, funding mechanisms, project selection requirements and performance criteria, but a system conservation program must incorporate sufficient flexibility to enable states and agencies in the two basins to implement and administer the projects independently in accordance with each basin's legal framework, river operations, and hydrology. For a system conservation program to significantly increase water surface elevations at Lake Powell and Lake Mead, significant investment would be necessary.

## **Recommendation to Congress**

The Department of the Interior supports system conservation program activities in the Colorado River Basin and recommends that such activities should be continued. The widespread interest in system conservation activities and shared Pilot Program experience gained by Reclamation, state agencies, Local Funding Agencies, NGOs, Colorado River water users, and tribes will serve as a platform for future collaboration on system conservation activities to help mitigate drought in the Colorado River Basin.

# **I. Pilot Program Background**

## **A. Purpose and Scope**

This report presents the experience gained and findings reached by the Bureau of Reclamation (Reclamation), the Upper Division States (Wyoming, Colorado, Utah, and New Mexico) of the Colorado River Basin, four municipal water agencies namely Denver Water, The Metropolitan Water District of Southern California (MWD), the Southern Nevada Water Authority (SNWA), and the Central Arizona Water Conservation District (CAWCD) (Local Funding Agencies), and the Walton Family Foundation (WFF) which partnered with the Local Funding Agencies and Reclamation to fund and participate in pilot projects to increase Colorado River System water in Lake Mead and the four initial units of the Colorado River Storage Project (CRSP) reservoirs, which includes Lake Powell.<sup>3</sup> The report also presents an evaluation of the effectiveness of the Pilot Program based on volumes of water conserved, pilot project cost, average cost per acre-foot (acre-feet or AF), impact to Colorado River System storage, administrative and technical challenges, water user and public perception and receptiveness to participation in the Pilot Program. Findings and recommendations are provided at the conclusion of the report including lessons learned and identification of issues.

## **B. Authority**

The Pilot Program for funding the creation of Colorado River System water through voluntary, compensated water conservation and reductions in use is authorized by the Act of Congress approved June 17, 1902 (32 Stat. 388), designated the Reclamation Act, and acts amendatory thereof or supplementary thereto; the Act of March 4, 1921, referred to as the Contributed Funds Act (41 Stat. 1404, 43 U.S.C. § 397a); the Act of December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act; the Act of April 11, 1956 (70 Stat. 105), designated the Colorado River Storage Project Act; the Act of September 30, 1968 (82 Stat. 885), designated the Colorado River Basin Project Act; the Act of June 24, 1974 (88 Stat. 266), designated the Colorado River Basin Salinity Control Act, as amended; and the Act of March 30, 2009 (123 Stat. 991), known as the Omnibus Public Land Management Act; and Title II of Division D of the Consolidated and Further Continuing Appropriations Act, 2015, Public Law (Pub. L.) No. 113-235, dated December 16, 2014, as amended.

## **C. Report and Recommendation Requirements**

Pursuant to Pub. L. No. 113-235, Division D, Title II, Section 206(d), not later than September 30, 2018, the Secretary of the Interior (Secretary) is required to submit to the Committees on Appropriations and Natural Resources of the House of Representatives and the Committees on Appropriations and Energy and Natural Resources of the Senate a report

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<sup>3</sup> WFF provided funding which facilitated the Environmental Defense Fund's (EDF) participation as a Third-Party Contributor in the Pilot Program.

evaluating the effectiveness of the pilot projects described in Section 206(a). The Secretary is further required to provide a recommendation to Congress whether the activities undertaken by the pilot projects should be continued. Submission of this report to Congress was delayed to allow for inclusion of additional experience and accomplishments gained through calendar year 2019.

The statutory authority for pilot projects to increase Colorado River System water and requirements for the report to Congress are provided below:

SEC. 206. (a) IN GENERAL.—The Secretary of the Interior may fund or participate in pilot projects to increase Colorado River System water in Lake Mead and the initial units of Colorado River Storage Project reservoirs, as authorized by the first section of the Act of April 11, 1956 (43 U.S.C. 620), to address the effects of historic drought conditions.

(b) ADMINISTRATION.—Pilot projects under this section are authorized to be funded through—

(1) grants by the Secretary to public entities that use water from the Colorado River Basin for municipal purposes for projects that are implemented by 1 or more non-Federal entities; or

(2) grants or other appropriate financial agreements to provide additional funds for renewing or implementing water conservation agreements that are in existence on the date of enactment of this Act.

(c) LIMITATIONS.—

(1) Funds in the Upper Colorado River Basin Fund established by section 5 of the Colorado River Storage Project Act (43 U.S.C. 620d) and the Lower Colorado River Basin Development Fund established by section 403 of the Colorado River Basin Project Act (43 U.S.C. 1543) shall not be used to carry out this section; and

(2) the authority to fund these pilot projects through grants shall terminate on September 30, 2018.

(d) REPORT AND RECOMMENDATION.—Not later than September 30, 2018, the Secretary shall submit to the Committees on Appropriations and Natural Resources of the House of Representatives and the Committees on Appropriations and Energy and Natural Resources of the Senate a report evaluating the effectiveness of the pilot projects described in subsection (a) and a recommendation to Congress whether the activities undertaken by the pilot projects should be continued.

## D. Physical Setting and Significance of the Colorado River

The Colorado River Basin (Figure 1 below) is located in the southwestern United States and occupies an area of approximately 250,000 square miles. Approximately 1,400 miles long, flowing through the seven states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming and the United Mexican States (Mexico), the Colorado River and its tributaries (Colorado River System) drain roughly one-twelfth of the land area of the contiguous United

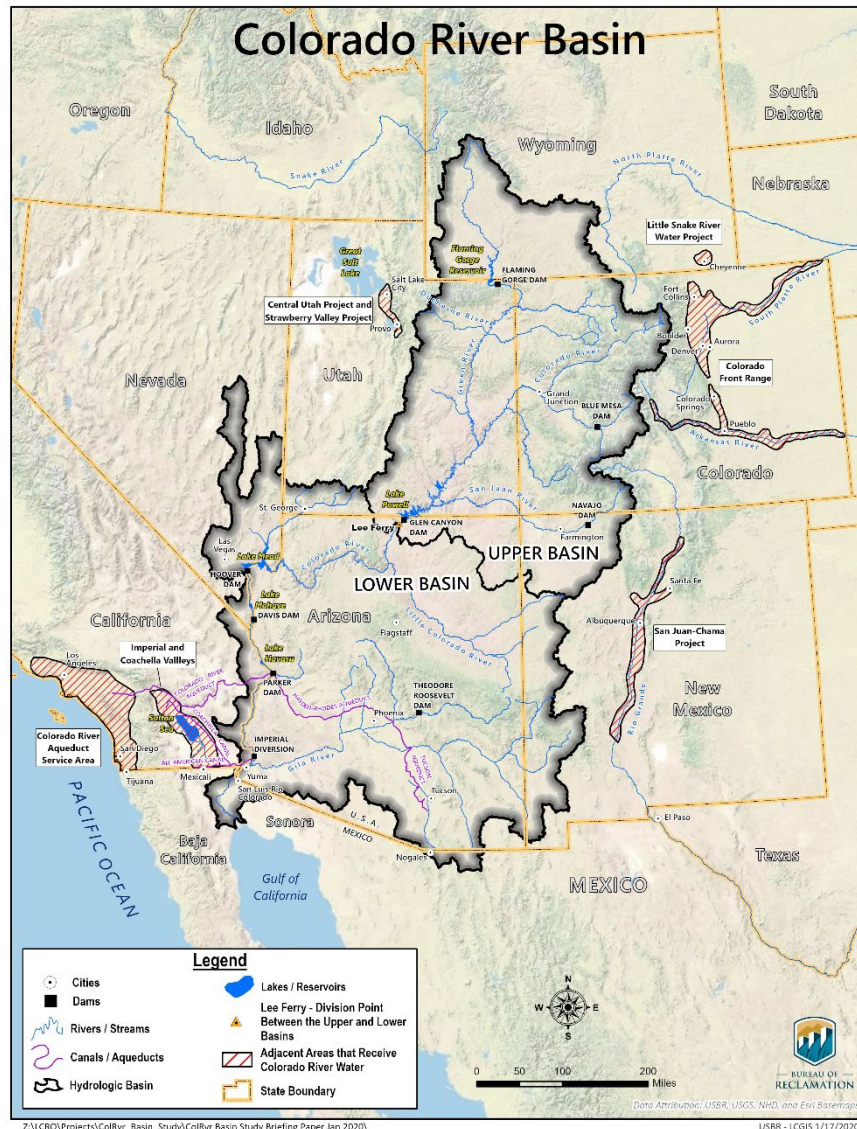


Figure 1. Map of the Colorado River Basin.

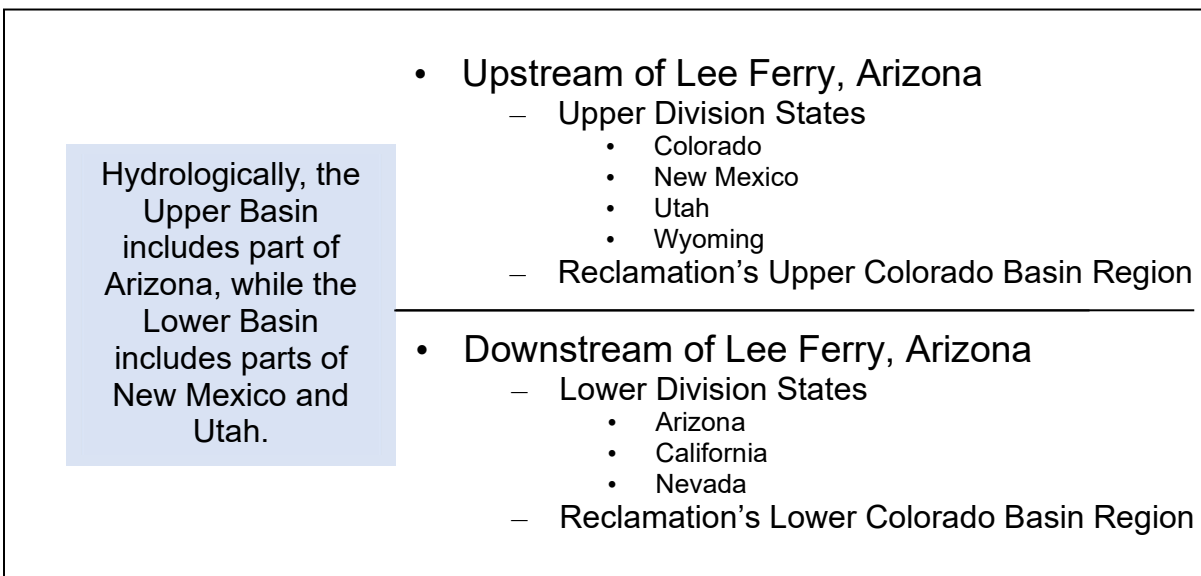
States. Approximately 108,000 square miles of the watershed are located in the upper Colorado River Basin (Upper Basin). Approximately 90 percent of the water for the entire basin originates in the Upper Basin. The lower Colorado River Basin (Lower Basin) is arid with little tributary runoff reaching the mainstream of the Colorado River except during occasional storms. The Lower Basin is largely dependent upon managed use of the Colorado River System to make its lands productive and habitable. Congressionally authorized purposes of Reclamation projects in the Colorado River Basin include but are not limited to water supply, hydropower, and flood control. Reclamation projects also provide recreation and fish and wildlife benefits.

## E. Administrative Framework of the Colorado River Basin

In 1922, Colorado River water rights negotiations among the seven Colorado River Basin States resulted in the Colorado River Compact of November 24, 1922, which, among other things, divided the Colorado River Basin into two basins, the Upper Basin and the Lower Basin. Lee



Ferry, Arizona,<sup>4</sup> is established as the division point between the two basins. Figure 2 below provides a simple description of the division of the Colorado River Basin and Reclamation's geographic jurisdiction.



**Figure 2. Division of the Colorado River Basin.**

On behalf of the Secretary, Reclamation operates and manages major dams, reservoirs, diversion works, and other facilities on the Colorado River pursuant to a body of documents referred to as the Law of the River. The Law of the River comprises operating criteria, regulations, administrative decisions, Federal statutes, interstate compacts, court decisions and decrees, an international treaty, and contracts with the Secretary.

## F. Colorado River Basin Hydrology

Colorado River flow is highly variable, with annual natural flow in the Upper Basin (which accounts for 90 percent of the total flow in the basin) fluctuating from a low flow of 5.4 million acre-feet in 1977 to a high flow of 24.4 million acre-feet in 1984, as calculated at the United States Geological Survey (USGS) stream gage at Lees Ferry, Arizona.<sup>5</sup> When the 1922 Colorado River Compact was signed, average annual natural flow was estimated to be nearly 18 million acre-feet. The current long-term average annual natural flow, for the period from 1906 through 2017, is 14.8 million acre-feet.

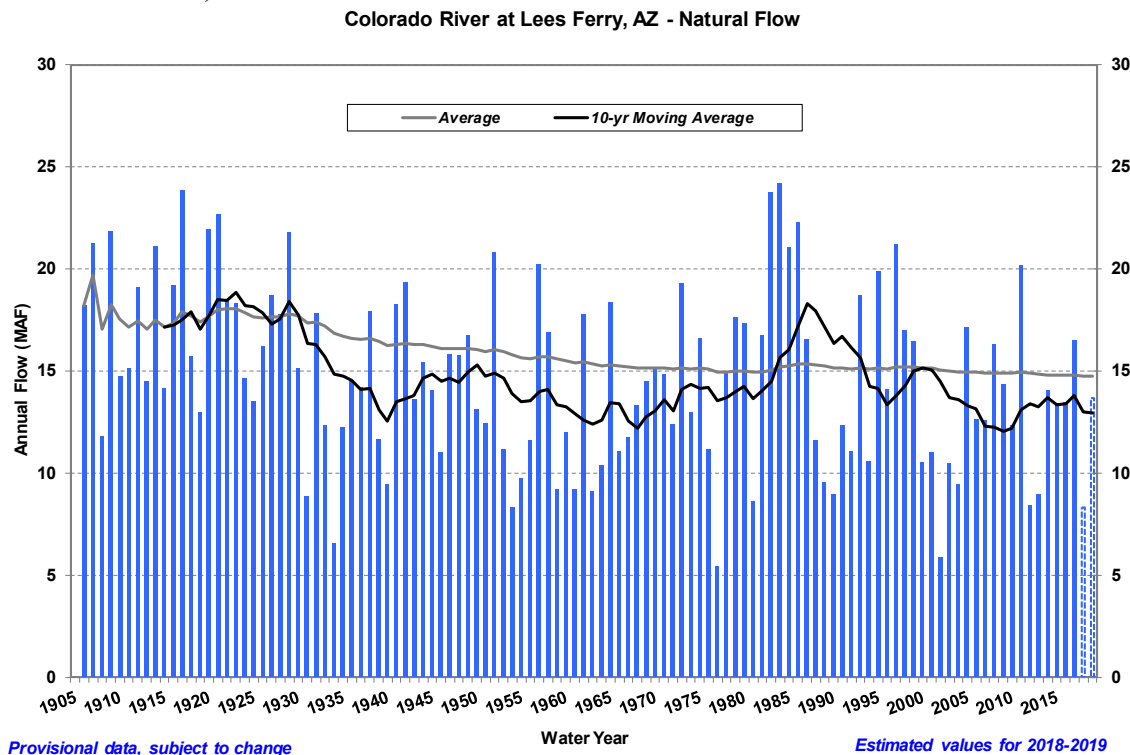
<sup>4</sup> Lee Ferry, Arizona is the division point between the Upper and Lower Basins of the Colorado River, as established by the 1922 Colorado River Compact. Lee Ferry is located downstream of the confluence with the Paria River. Lee Ferry should not be confused with Lees Ferry, Arizona which is a historic river crossing where the United States Geological Survey operates a stream gage. Lees Ferry is located 2 miles upstream of Lee Ferry.

<sup>5</sup> The Colorado River natural flow dataset is the observed flow corrected for the effects of upstream reservoirs and depletions.



Due to the foresight of early water managers, the Colorado River System was designed with more than 60 million acre-feet of storage capacity, four times the average annual natural flow, allowing for runoff to be captured and stored in high flow years which can then be used to help meet water delivery requirements in low flow years. The large mainstream reservoirs formed by Glen Canyon Dam (Lake Powell) and Hoover Dam (Lake Mead) capture water and store it to be released when needed. The combined storage of these two large reservoirs was reduced from nearly full capacity to about half of capacity within the first 5 years of a drought that began in 2000 and continued through calendar year 2019. As of September 30, 2019, combined storage in Lake Powell and Lake Mead totaled 23.54 million acre-feet, with storage in Reclamation's Colorado River System reservoirs totaling 31.64 million acre-feet, or 53.1 percent of capacity.

Figure 3 below shows the annual natural flow of the Colorado River at the USGS stream gage at Lees Ferry, Arizona, from Water Year 1906 through Water Year 2019 (October 1, 1905 through September 30, 2019).<sup>6</sup>



**Figure 3. Natural flow of the Colorado River at Lees Ferry Gaging Station, Arizona, Water Year 1906 through 2019.**

## G. Colorado River Operations

After the passage of the Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956) (CRSPA), and the subsequent construction of Glen Canyon Dam and other facilities, the need arose to coordinate the operation of the Colorado River mainstream reservoirs and, in particular, to coordinate the operation of Lake Powell, the reservoir created by Glen Canyon

<sup>6</sup> Natural flow represents the flow that would have occurred at the location had depletions and reservoir regulation not been present upstream of that location.

Dam, with the operation of Lake Mead, the reservoir created by Hoover Dam. The coordinated operation of Lake Powell and Lake Mead was addressed in 1968 in the Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (Basin Project Act).<sup>7</sup>

Since 1972, as required by Section 602(b) of the Basin Project Act and Article I(1) of the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs, dated June 4, 1970, as amended March 21, 2005 (LROC), the Secretary has prepared an annual report for transmittal to the Congress and the Governors of the Colorado River Basin States describing Colorado River hydrologic conditions, the releases made from system reservoirs during the prior operating year, and the projected operations for the current or upcoming year to satisfy project purposes under varying forecasted hydrologic conditions. This report, known as the *Annual Operating Plan For Colorado River Reservoirs* (AOP) which is developed consistent with the consultation requirements of the Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, 106 Stat. 4779 (1992), also addresses among other things, the amount of water considered necessary to be in storage in the Upper Basin reservoirs pursuant to Section 602(a) of the Basin Project Act, the quantity of water available for delivery to Mexico pursuant to the Treaty between the United States of America and Mexico, Utilization of Water of the Colorado and Tijuana Rivers and of the Rio Grande, 59 Stat. 1219 (1944) (Mexican Water Treaty) and Minutes of the International Boundary and Water Commission, and whether the beneficial consumptive use requirements of mainstream water users in the Lower Division States will be met under a “normal,” “surplus,” or “shortage” condition.<sup>8</sup>

The condition governing the quantity of water that may be released from Lake Mead in a specific year for beneficial consumptive use within the Lower Division States is determined by the Secretary annually in accordance with the LROC as amended and Article II of the Consolidated Decree in *Arizona v. California*, 547 U.S. 150 (2006) (Consolidated Decree). The provisions for normal, surplus, and shortage conditions, respectively, are provided in Article II of the Consolidated Decree:

- When sufficient mainstream water is available to satisfy 7,500,000 acre-feet of consumptive use in the Lower Division States (Article II.B.1)
- When sufficient mainstream water is available to satisfy in excess of 7,500,000 acre-feet of consumptive use in the Lower Division States (Article II.B.2)
- When insufficient mainstream water is available to satisfy 7,500,000 acre-feet of consumptive use in the Lower Division States (Article II.B.3)<sup>9</sup>

Circumstances under which the Secretary would reduce the amount of water available for consumptive use from Lake Mead to the Lower Division States in any given year to below 7,500,000 acre-feet, pursuant to the Consolidated Decree, are identified in the *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead*, dated December 13, 2007 (2007 Interim Guidelines). The 2007 Interim Guidelines were adopted by Secretary Dirk Kempthorne for an interim period in effect through December 31, 2025 (through preparation of the 2026 AOP).

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<sup>7</sup> *The Colorado River Documents 2008*, Chapter 1: Colorado River Operations, page 1-1.

<sup>8</sup> *ibid.* page 1-5.

<sup>9</sup> *ibid.* page 1-4.

The 2007 Interim Guidelines provide an objective methodology to determine the annual releases from Lake Powell based on water surface elevations. The 2007 Interim Guidelines also identify water surface elevations in Lake Mead that act as triggers for various levels of shortage and the corresponding reductions in water deliveries to Arizona and Nevada. No reductions in water deliveries are made to California under the 2007 Interim Guidelines. Mexico agreed to accept certain reductions in water deliveries at water surface elevations in Lake Mead as reflected in Minute No. 319 which expired December 31, 2017, but is preserved in Minute No. 323 which supersedes Minute No. 319 and remains in effect until December 31, 2026. In May 2019, the Colorado River Drought Contingency Plan (DCP), which consists of both Upper Basin and Lower Basin DCP agreements, was executed pursuant to Pub. L. No. 116-14. Among other things, the provisions of the DCP will help to reduce the risk of Lake Powell and Lake Mead declining to critically low elevations. Execution of the Lower Basin DCP triggered Mexico's Binational Water Scarcity Contingency Plan consistent with Section IV of Minute No. 323.

## **H. Colorado River Conditions From 2000 to Execution of the Funding Agreement in 2014**

The Colorado River System has been in drought since 2000. Data reflecting Colorado River System storage and reservoir elevations in Lake Powell and Lake Mead reveal the impacts of the drought, as shown in Figure 4 on the next page. The combined capacity of Lake Powell and Lake Mead together comprise 83 percent of the total storage capacity in the Colorado River System. On September 30, 1999, which was the end of Water Year 1999 (a water year runs from October 1 through September 30), the combined storage of Lake Powell and Lake Mead was 47.59 million acre-feet of water or 92 percent of the combined capacity. The reservoir elevations of Lake Powell and Lake Mead on that date were 3,691.59 feet above mean sea level (msl) and 1,211.29 feet above msl, respectively. By Water Year 2014, following execution of the multi-agency agreement to initiate the Pilot Program, the combined storage of Lake Powell and Lake Mead had decreased to 22.41 million acre-feet or 43 percent of the combined capacity. The reservoir elevation of Lake Powell was 3,605.53 feet above msl and Lake Mead was 1,081.33 feet above msl on September 30, 2014. In the Lower Basin and under the express provisions of the 2007 Interim Guidelines, a shortage condition is triggered when Lake Mead's January 1 elevation for the upcoming year is projected to be at or below 1,075 feet above msl based on modeling conducted by Reclamation in August. While a Lower Basin shortage condition was not projected to occur in 2015, based on analysis conducted in April 2014, at the time the agreement on the Pilot Program was executed (July 30, 2014), Reclamation estimated the probability of shortage for 2016 to be 23 percent and for 2017 to be 51 percent. Under a first level shortage condition, Colorado River water deliveries would be reduced to Arizona by 320,000 acre-feet and to Nevada by 13,000 acre-feet. Under Minute No. 319 and subsequently Minute No. 323, Mexico would reduce its delivery by 50,000 acre-feet.

Water supply and demand imbalances in the Colorado River Basin persist. The *Colorado River Basin Water Supply and Demand Study*, dated December 2012, among other things, defined water supply and demand imbalances in the Colorado River Basin and the adjacent areas of the Colorado River Basin States that receive Colorado River water through 2060.

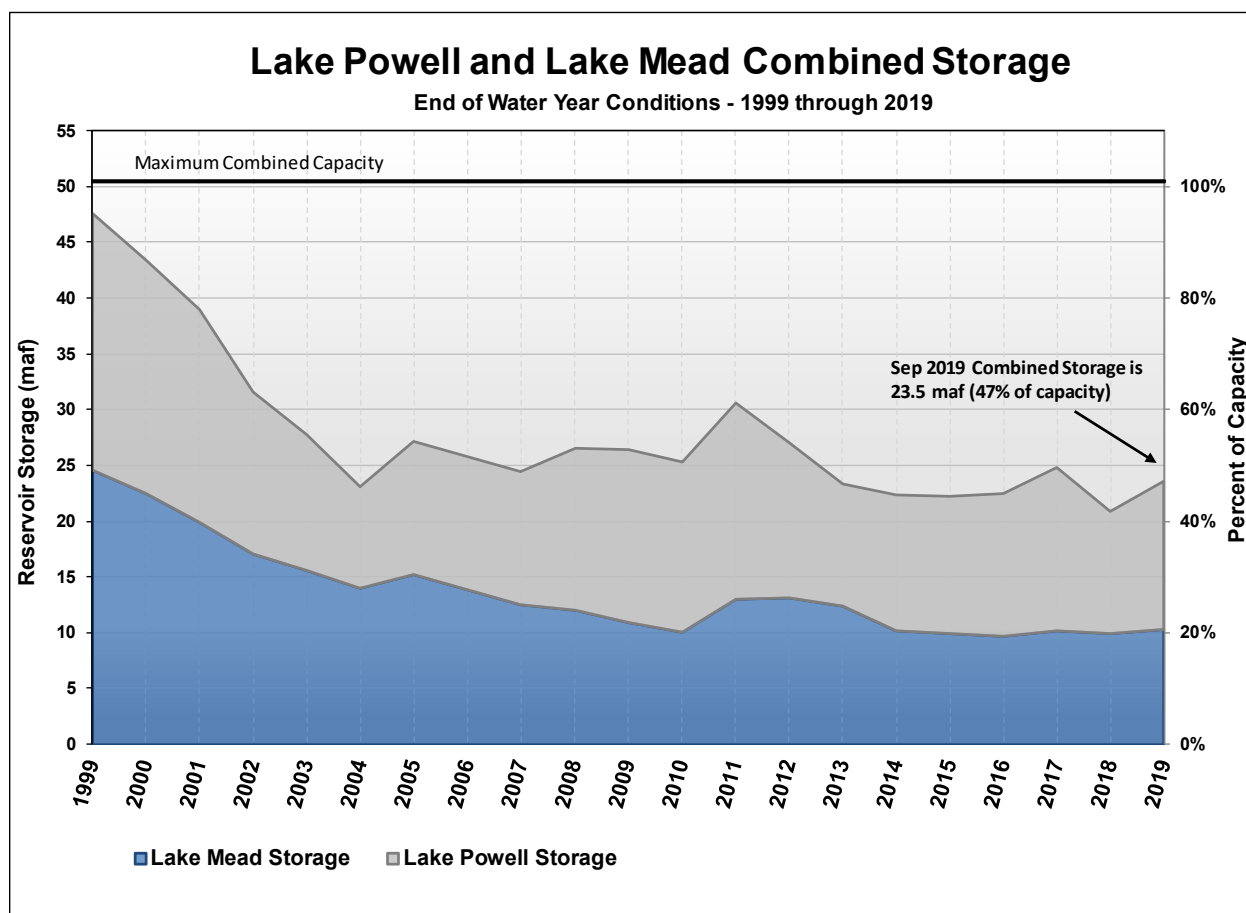


Figure 4. Lake Powell and Lake Mead combined storage.

## I. General Description of the Pilot Program in the Upper and Lower Basins

### Initial Concepts/Discussion

In June 2013, due to the ongoing drought, the Secretary encouraged Upper and Lower Basin state representatives to develop drought contingency plans which include demand management concepts to reduce consumptive use of Colorado River water. In 2014, Reclamation, the Colorado River Basin States and Colorado River water users explored ideas that could mitigate the impacts of the ongoing drought in the Colorado River Basin. One idea that received broad support was funding projects that would test a wide range of measures to reduce consumptive use and/or losses and conserve water in Lake Powell or Lake Mead as Colorado River System water for the benefit of all users by helping offset declining reservoir elevations. Lessons learned from testing new mechanisms to reduce consumptive use or loss of Colorado River System water could be used to design and implement long-term demand management programs in the Upper and Lower Basins. Negotiations on an agreement to establish and implement a conservation program in the Colorado River Basin occurred among the Department of the Interior, Reclamation, and municipal water agencies that ultimately partnered with Reclamation to provide funding and oversight of the Pilot Program.

## **Execution of Historic Agreement for a Pilot Program**

On July 30, 2014, Reclamation executed an agreement with CAWCD, SNWA, MWD, and Denver Water for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use, as amended (Funding Agreement) (Appendix A herein).<sup>10</sup> The Funding Agreement is historic because water agencies from both the Upper and Lower Basin and Reclamation agreed to jointly fund voluntary water conservation projects in both the Upper and Lower Basins to benefit the Colorado River System. The term of the Funding Agreement began July 30, 2014 and extends through the expiration date of the latest System Conservation Implementation Agreement (SCIA). An SCIA is a two-party agreement between the contracting entity, which is Upper Colorado River Commission (UCRC) in the Upper Basin and Reclamation in the Lower Basin, and the project participant or the project participant's authorized representative ("SCIA" is used in this report to represent an agreement entered into by the contracting entity and project participant in both basins). The SCIA provides for the terms and conditions which govern a Pilot Program project and compensation for system conservation water created.

On December 10, 2014, Reclamation, CAWCD, MWD, SNWA, the Arizona Department of Water Resources, the Colorado River Board of California and the Colorado River Commission of Nevada signed a Memorandum of Understanding (MOU) for pilot drought response actions. The MOU provided for Reclamation and the Municipal Water Agencies<sup>11</sup> to use their best efforts to create Protection Volumes<sup>12</sup> between 2014 and 2017. While water generated through initial funding for the Pilot Program would not be counted toward Reclamation's and the Municipal Water Agencies' Protection Volumes, Reclamation and the Municipal Water Agencies could agree that upon any expansion of the Pilot Program, water generated through such expansion could be counted towards Reclamation's and the Municipal Water Agencies' Protection Volumes.

Following execution of the Funding Agreement, in Pub. L. No. 113-235, dated December 16, 2014, Congress further authorized the Secretary to "fund or participate in pilot projects to increase Colorado River System storage in Lake Mead and the initial units of CRSP reservoirs, as authorized by the first section of the Act of April 11, 1956 (43 U.S.C. 620), to address the effects of historic drought conditions."<sup>13</sup> Pub. L. No. 113-235 as it relates to the Upper Basin expands the locations (reservoirs) where system conservation water created under the Pilot Program may be stored to include other reservoirs in the initial units of CRSP as well as Lake Powell which is in the Glen Canyon Unit of CRSP.

## **Pilot Program Objectives**

The Pilot Program was implemented to test a wide range of water conservation concepts that reduce water use. The experience gained from the Pilot Program can help to determine if temporary, compensated, voluntary, and measurable reductions in consumptive use of Colorado River water constitute a robust, feasible, and cost-effective approach to partially mitigate the

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<sup>10</sup> Amendments to the Funding Agreement are discussed in Section J.

<sup>11</sup> CAWCD, MWD, and SNWA

<sup>12</sup> Voluntary development of additional quantities of water stored in Colorado River reservoirs, in particular Lake Mead, necessary to reduce the risk of Lake Mead reaching critical reservoir elevations.

<sup>13</sup> Initial units of CRSP are Glen Canyon; Curecanti, later renamed Wayne N. Aspinall; Flaming Gorge; and Navajo.

impacts of long-term drought on the Colorado River System. Colorado River System water conserved as a result of the Pilot Program is for the sole purpose of increasing storage levels in Lakes Powell and Mead and will not accrue to the benefit or use of any individual users. Other Pilot Program objectives provided in the Funding Agreement include:

- Evaluate the feasibility of system conservation projects to partially mitigate impacts of salinity in the Colorado River System
- Identify efficient approaches for administering system conservation projects in the Colorado River Basin
- Explore opportunities to coordinate with the United States Department of Agriculture Natural Resources Conservation Service (NRCS) Farm Bill programs including the Environmental Quality Incentives Program (EQIP) and the Agricultural Water Enhancement Program to identify on-farm conservation improvement projects that may complement proposed system conservation projects in the agricultural sector and to assess the potential for NRCS funding and technical assistance
- Evaluate the results of the Pilot Program and consult with the appropriate parties to determine whether a long-term system conservation program should be adopted

### **Nature of Pilot Program Projects**

The Pilot Program is flexible regarding the type or nature of water conservation projects. From initiation of the Pilot Program to the present, selected projects include partial to multiple-year agricultural fallowing, split season deficit irrigation, conversion of flood to drip irrigation methods, golf course turf removal, effluent recovery, brackish water treatment and use of same as a substitution water supply, forbearance of non-Colorado River water imported into system reservoirs, reduction of out of basin exports, and substituting a Colorado River water supply with a non-Colorado River water supply.

### **Eligible Participants in Pilot Program Projects**

To be eligible for the Pilot Program in the Upper Basin, a participant must be an Upper Basin Colorado River Water User which is defined in the Funding Agreement in subarticle 4.12 as a person or entity within an Upper Division State that has an existing authorization under applicable state law to divert Colorado River System water as reasonably required for beneficial uses. To be eligible for the Pilot Program in the Lower Basin, a participant must be an Entitlement Holder which is defined in the Funding Agreement in subarticle 4.5 as a person or entity within the Lower Division States or Mexico that: (1) has an existing authorization to divert or order Colorado River water, (2) with the consent of (1) is located within the water service area of (1); or (3) has control of state appropriated water rights on the Muddy and Virgin Rivers, all as reasonably required for beneficial uses. Upper Basin Colorado River Water Users and Entitlement Holders from all sectors including agriculture, tribal, municipal, industrial, water purveyors, private entities, and private individuals may participate.

### **Pilot Program Contracting Entities and Responsibilities**

Pursuant to the Funding Agreement, Reclamation consults with the Local Funding Agencies, respective Upper Division States for Upper Basin projects, and other appropriate entities including EDF in 2018 and 2019 (in the Lower Basin), regarding implementation of the Pilot Program. The Funding Agreement provides for the Upper Division States to identify an entity to act as the Upper Basin Contracting Entity to enter into and administer Pilot Program agreements

in the Upper Basin. The Upper Division States selected UCRC to perform the responsibilities of the Upper Basin Contracting Entity.<sup>14</sup> In the Funding Agreement, Reclamation is defined as the contracting entity for Pilot Program projects in the Lower Division States. For projects in the Lower Division States, Reclamation's Lower Colorado Basin Region processes requests for submission of Pilot Program proposals and their review, enters into and administers SCIAs with Pilot Program project participants, and verifies and documents consumptive use reductions under the Pilot Program. Reclamation's Lower Colorado Basin Region, with the consent of the Local Funding Agencies, undertook these responsibilities for the Pilot Program in the Lower Basin because the Lower Colorado Basin Region gained experience in planning, implementing, overseeing, and evaluating a temporary system conservation program, known as the Demonstration System Conservation Program, from 2006 through 2010, in the Lower Division States. The objectives and terms and conditions of the Demonstration System Conservation Program and the Pilot Program are similar. Although Reclamation did not partner with non-Federal entities under the Demonstration System Conservation Program, Reclamation consulted closely with the Lower Division States and other interested parties in all facets of the Demonstration System Conservation Program.

### **Pilot Program Agreements**

Implementation of Pilot Program projects requires the execution, among various parties, of contracts including SCIAs, project specific funding agreements, and, in the Lower Basin, two-party agreements allowing forbearance. SCIAs are two-party agreements between the UCRC in the Upper Basin or Reclamation's Lower Colorado Basin Region in the Lower Basin and the Pilot Program project participant or its authorized representative. The purpose of an SCIA is to implement the Pilot Program project. In the Upper Basin, an SCIA cannot be executed without the consent of the Governor's Representative of the state in which the proposed project is to be located and if applicable, the Local Funding Agency located within the same state as the proposed pilot project. In the Lower Basin, an SCIA cannot be executed without the consent of the Local Funding Agency located within the same state as the proposed Pilot Program project. The SCIA describes the project, the estimated volume and timing of the creation of system conservation water, the terms and conditions for its implementation, monitoring, verification, and quantification of and accounting for system conservation water, and evaluation of project performance. Project costs and financial compensation and payments to the project participant are provided for as well as performance milestones which trigger invoicing of funding partners and payment to the project participant. Payments to the project participant are or were made by the UCRC in the Upper Basin or Reclamation's Lower Colorado Basin Region in the Lower Basin pursuant to the applicable SCIA. In the Lower Basin, the project proposal is attached as an exhibit to the SCIA. A template SCIA for a Lower Basin Pilot Program project is provided in Appendix B herein.

Project specific funding agreements are among the UCRC or Reclamation's Lower Colorado Basin Region, the participating Local Funding Agencies, and a Third-Party Contributor as applicable, for the amount and timing of financial contributions and project specific performance

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<sup>14</sup> UCRC was established by the Upper Colorado River Basin Compact, dated October 11, 1948, among the Upper Basin States of Arizona, Colorado, New Mexico, Utah, and Wyoming primarily to divide the water apportioned to the Upper Basin among the Upper Basin States. The UCRC performs a vital role in the management of the Colorado River in the Upper Basin and in representing Upper Basin interests in matters involving the Lower Basin.

metrics. A Local Funding Agency, Third-Party Contributor, and/or Reclamation's Lower Colorado Basin Region may elect not to fund a Pilot Program project. The project specific funding agreement must be executed by the participating Local Funding Agencies and Third-Party Contributor as applicable, and the UCRC or the Lower Colorado Basin Region as appropriate before the SCIA can be offered to the project participant and executed. The project specific funding agreement describes the project, provides the allocation of project costs to the funding parties which reflects the payments that the funding parties will make towards compensating the project participant, describes performance milestones which trigger invoicing and payment to the project participant, and provides other pertinent terms and conditions. In the Upper Basin in 2018, this process was replaced by a Programmatic Funding Agreement that was developed to cover the provision of funds to UCRC for approved projects. The Programmatic Funding Agreement identified the approved projects and contributions for each project from the Local Funding Agencies and Reclamation. Payments and performance metrics were specified in the specific participation contract with each project participant. In the Lower Basin, execution of the project specific funding agreement also reflects approval by the Local Funding Agencies and Third-Party Contributor as applicable of the form of SCIA that was intended to be entered into by the project participant and Reclamation's Lower Colorado Basin Region. The project specific funding agreement is attached as an exhibit to the SCIA in the Lower Basin. A project specific funding agreement template used in the Lower Basin is attached in Appendix C herein.

As mentioned above, a key principle of the Pilot Program is that system conservation water will benefit the Colorado River System and will not accrue to the benefit of or use by any individual Colorado River System water user. Two-party letter agreements have been used in the Lower Basin to allow the conserved water to remain in Lake Mead as Colorado River System water. The two-party agreements are between Reclamation's Lower Colorado Basin Region and surplus or unquantified contractors or junior priority Colorado River water users or other Colorado River water users, as appropriate, located in the same state as the proposed Pilot Program project wherein a water user agrees not to divert the volume of system conservation created by a specific Pilot Program project. These two-party agreements are discussed in Section III and a template is attached in Appendix D herein.

### **Selection of Pilot Program Projects**

The process for submission of Pilot Program project proposals and the selection of Pilot Program participants will be discussed in detail in the sections of this report that focus on the Pilot Program in each basin. In the Upper Basin, the UCRC and the Upper Division States posted a request for proposal (RFP) on their websites and reached out to potential participants. In the Lower Basin, Reclamation's Lower Colorado Basin Region mailed letters announcing funding opportunities to individuals and entities eligible to participate in a Pilot Program project. The letter informs the recipients of the requirements that must be met for project proposals and how proposals would be evaluated and selected. In the Lower Basin, project proposals were evaluated and selected by Reclamation and the Local Funding Agencies and in 2018 and 2019, EDF as the Third-Party Contributor. In the Upper Basin, project proposals were evaluated and selected by the UCRC, Reclamation, the Local Funding Agencies, and representatives from each Upper Division State. The selection criteria include:

- Consistency of the proposal with the Funding Agreement requirements



- Ability to demonstrate the efficacy of a new conservation method
- Diversity in the types of water conservation methods
- Need to implement geographically diverse conservation measures in the Upper and Lower Basins to most effectively demonstrate the efficacy of Colorado River System-wide efforts to reduce salinity and maximize storage in Lake Powell and Lake Mead
- Proposed cost per acre-foot of system conservation water
- Relative size of the proposed project
- Comparative ease or difficulty of administering the contracts and verifying the proposed volume of system conservation water, reduction in salinity, increase in the quantity of water flowing into Lake Powell, and increase in storage in Lake Mead
- Amount of time required to implement the activities needed to generate system conservation water
- Required level of environmental compliance
- Potential for third-party economic impacts that would not be adequately mitigated via compensation to be paid under the proposed project
- Number of intervening water users that are located between the proposed project and Lake Powell or Lake Mead, if applicable
- Number and relative difficulty of obtaining any required third-party consents or forbearance agreements
- Degree to which the proposed project will generate measurable increases in flows or water quality that are beneficial for habitat and the environment
- Degree to which the proposed project is consistent with or leverages additional funding from other programs including salinity control and NRCS programs
- Location and timing of increases in flows or improvement of water quality from the proposed project
- Utilization, as appropriate, of the evaluation criteria developed by Reclamation for the WaterSMART Program (Attachment 1 to the Funding Agreement)

The Funding Agreement reflects that the signatory parties desired that any SCIA would be approved by Reclamation and each of the Local Funding Agencies. Should a Local Funding Agency not approve an SCIA, no funds from the dissenting Local Funding Agency would be used to fund that project. The Funding Agreement also reflects that an SCIA cannot be executed without the consent of the Local Funding Agency located within the same state as the proposed Pilot Program project. In the Upper Basin, the consent of the Governor's Representative of the state in which the proposed project is to be located is also required. Consent was obtained for all Pilot Program projects selected.

## **J. Pilot Program Funding in the Upper and Lower Basins**

The Funding Agreement was executed in July 2014. The Pilot Program commenced in fall of 2014 in the Lower Basin and in early 2015 in the Upper Basin. The first round of solicitation, selection, and implementation of Pilot Program projects in the Upper and Lower Basins are referred to as Phase 1. Phase 1 funds were obligated toward Pilot Program project costs beginning in fiscal year (FY) 2015. The Upper Basin implemented Phase 2 in 2016; Phase 3 in

2017; and Phase 4 in 2018. The Lower Basin implemented Phase 2 in 2016 through 2017; and Phase 3 in 2018 through 2019.

Pursuant to the Funding Agreement, the Federal and non-Federal funding partners originally contributed \$11 million (\$3 million from Reclamation and \$2 million each from the Local Funding Agencies). The Funding Agreement also provides that other entities may contribute funding for Pilot Program projects by providing funds through a Local Funding Agency. The Funding Agreement allocated a minimum of \$2.75 million for conservation projects in the Upper Basin and up to \$8.25 million in the Lower Basin. To enable Reclamation and the Local Funding Agencies to contribute additional funding to the Pilot Program, the Funding Agreement was amended on August 12, 2015 (Appendix A herein). Amendment No. 1 to the Funding Agreement provided for the Parties to contribute no more than \$11.25 million for proposed system conservation projects in the Lower Division States or Mexico. The United States, through Reclamation, could provide up to \$6 million towards the total Pilot Program cost. In addition, if Congress appropriated additional funds to Reclamation for the Pilot Program through grants, such funds could be added to the Funding Agreement without requiring additional contributions from the Local Funding Agencies or amendment of the Funding Agreement.

Under the Consolidated Appropriations Act, 2016, Congress appropriated \$100 million for western drought response. A portion of the Federal drought response funds appropriated by Congress for FY 2016 and the non-Federal funds contributed by the non-Federal partners financed a second phase for project solicitation and implementation of the Pilot Program in both the Upper and Lower Basins. Amendment No. 2 to the Funding Agreement, dated March 8, 2016 (Appendix A herein), was executed to provide for parties to the Funding Agreement to contribute additional funds to the Pilot Program without the need to further amend the Funding Agreement. Notwithstanding the original funding limits in the Funding Agreement, when opportunities to contribute additional funding arise, Amendment No. 2 to the Funding Agreement enables Reclamation and the Local Funding Agencies to consult with one another and obtain informal approval for the additional funding and then follow up with written notice concerning the additional funding. The source of additional funds may be from an entity that is not a signatory to the Funding Agreement, as amended. Such funds would be contributed to the Pilot Program through Reclamation or a Local Funding Agency.

In 2016 and 2017, pursuant to Amendment No. 2 to the Funding Agreement, Reclamation and the Local Funding Agencies provided written notice of additional financial contributions to the Pilot Program. Certain additional funding letters reflect that some of the financial contributions came from parties that are not signatory to the Funding Agreement, as amended. The August 16, 2016 letter from MWD reflects that MWD committed to contributing an additional \$1 million to the Pilot Program in the Lower Basin. A portion of the additional contribution equal to \$500,000 was provided by the Six Agency Committee, California, comprised of Coachella Valley Water District (CVWD), Imperial Irrigation District, the Los Angeles Department of Water and Power, MWD, Palo Verde Irrigation District, and the San Diego County Water Authority. In December 2016 and May 2017, Denver Water notified the Local Funding Agencies and Reclamation in writing that, through Denver Water, the WFF would contribute \$500,000 and the Windward Fund would contribute \$60,000 for eligible Phase 3 projects under the Pilot Program in the Upper Division States. In December 2018, Denver Water issued a written notice informing the

Local Funding Agencies and Reclamation that during 2018, WFF and the Gates Family Foundation had contributed \$400,000 and \$100,000 respectively for Phase 4 projects in the Upper Basin.

Under the Consolidated Appropriations Act of 2017, Pub. L. No. 115-31, dated May 5, 2017, Reclamation's Lower Colorado Basin Region was allocated \$3,500,000 for pilot projects in the Lower Basin and obligated \$3,445,175 to exercise second-year options for two Pilot Program projects that were implemented in 2016. In FY 2017, in the Upper Basin, Reclamation contributed \$11,092.37 towards Pilot Program project costs and the non-Federal funding partners contributed \$2,161,762.62.

### **Upper Basin**

In FY 2015 for Phase 1, the non-Federal partners funded \$754,990 based on actual costs for Pilot Program Phase 1 projects in the Upper Basin. No Federal funds were appropriated to Reclamation for direct Pilot Program project costs in the Upper Basin in FY 2015.

Reclamation's Upper Colorado Basin Region provided \$50,000 to UCRC for program administration and detailed one employee to provide UCRC administrative assistance on a half-time basis at a cost of \$64,000. Similar to Phase 1, in Phases 2, 3, and 4 of the Upper Basin's Pilot Program, Reclamation's Upper Colorado Basin Region continued to provide financial and staff support to UCRC to assist with program administration. All funding reported in Table 1 on page 21 reflects payments made by the Local Funding Agencies and Reclamation for Pilot Program projects based on actual costs. Administrative costs incurred by Reclamation or the Local Funding Agencies are not reported in Table 1. Under the \$100 million western drought response appropriation in 2016, Reclamation's Upper Colorado Basin Region contributed \$1,000,000 for direct project costs, \$65,000 for program administration, and administrative assistance at a cost of \$148,000 for Phase 2 efforts in the Upper Basin. Non-federal partners contributed \$628,474.48 for Phase 2 Pilot Program projects in the Upper Basin.

### **Lower Basin**

During implementation of Phase 1 of Pilot Program projects in the Lower Basin, Reclamation and CAWCD each contributed additional funds of \$85,400 and \$1,000,000 respectively for Pilot Program projects in the Lower Basin. Initially, the total funding of Phase 1 Pilot Program projects in the Lower Basin amounted to \$9,335,400. In 2017, a downward cost adjustment on Phase 1 projects in the Lower Basin was made and is discussed below and on the following page.

From the \$100 million appropriated by Congress for western drought response in 2016, Reclamation contributed an additional \$3.5 million to the Pilot Program in the Lower Basin plus \$300,000 from another Reclamation funding source. The non-Federal parties contributed additional funds to the Pilot Program totaling \$2,020,000.

In the summer of 2017, the CVWD (a Pilot Program project participant from Phase 1) informed Reclamation that its furrow/flood to drip irrigation conversion rebate program failed to attract the expected interest from farmers. See discussion of CVWD Furrow/Flood to Drip Conversion Rebate Program (Rebate Program) in Section III.D. Due to lower than expected farmer participation in the project, the expected project costs decreased from \$1,000,500 to \$106,500. Reclamation, which had invoiced the Local Funding Agencies for their financial contributions in advance, refunded \$894,000 to the Local Funding Agencies collectively. In Autumn 2017,

Phase 1 costs for the Pilot Program in the Lower Basin were adjusted downward from \$9,335,400 to \$8,441,400. Likewise, the volume of system conservation water stored in Lake Mead was adjusted downward from 62,615 acre-feet to 58,147 acre-feet.

In 2018 through 2019, the Lower Basin implemented Phase 3 Pilot Program projects. Reclamation obligated \$3.8 million (\$1.6 million in FY 2018 and \$2.2 million in FY 2019) and the Local Funding Agencies and WFF through EDF contributed \$8.4 million.

All administrative costs incurred by Local Funding Agencies, Reclamation's Lower Colorado Basin Region which serves as the contracting entity for the Pilot Program in the Lower Basin, and EDF were covered by each organization and were neither reported nor recovered. All costs reported in Table 2 on the following page reflect both previous payments made by the Local Funding Agencies, Reclamation, and WFF through EDF as a Third-Party Contributor, where applicable, and expected future payments for projects which will not be fully invoiced until calendar year 2020 and 2021 when the volume of system conservation water created will have been determined. Sometimes the funding commitments made by Reclamation, the Local Funding Agencies, and EDF were higher than the actual project costs which are invoiced by Reclamation because the actual volume of system conservation created and stored in Lake Mead was less than the volume of system conservation expected when the project funding was committed.

The funding information for the Pilot Program in the Upper and Lower Basins based on actual and expected costs, as applicable, is summarized in Tables 1 and 2 on the following page. Tables 1 and 2 reflect that total Pilot Program funding by contributor is approximately: Denver Water, \$5.1 million; CAWCD, \$5.5 million; MWD, \$5.0 million<sup>15</sup>; SNWA, \$5.0 million; Reclamation, \$16.1 million; WFF through EDF, \$1.5 million for a total of approximately \$38.4 million.

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<sup>15</sup> Of MWD's contribution, \$500,000 was contributed through MWD by the Six Agency Committee which is comprised of the six California water agencies including CVWD, MWD, Imperial Irrigation District, Los Angeles Department of Water and Power, San Diego County Water Authority, and Palo Verde Irrigation District.

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 1. Upper Basin Project Funding Based on Actual Costs (\$) 2015 Through 2018\***

Upper Basin	DW*	CAWCD	MWD	SNWA	USBR	Total
Phase 1 2015	446,039.00	102,983.68	102,983.64	102,983.68	0.00	754,990.00
Phase 2 2016	434,900.83	64,524.54	64,524.57	64,524.54	1,000,000.00	1,628,474.48
Phase 3 2017**	1,635,423.21	175,446.47	175,446.47	175,446.47	11,092.37	2,172,854.99
Phase 4 2018***	2,186,495.54	259,522.96	259,522.95	259,522.95	1,000,000.00	3,965,064.40
<b>Total</b>	<b>4,702,858.58</b>	<b>602,477.65</b>	<b>602,477.63</b>	<b>602,477.64</b>	<b>2,011,092.37</b>	<b>8,521,383.87</b>

\*Funding in this table may not match actual costs listed by phase/year in tables 6 through 9 because some projects experienced delays, scope changes, and/or were implemented over multiple years.

\*\*Phase 3 funding from Denver Water includes \$500,000 from WFF and \$60,000 from the Windward Fund contributed through Denver Water.

\*\*\*Phase 4 funding from Denver Water includes \$400,000 from WFF and \$100,000 from the Gates Family Foundation contributed through Denver Water.

**Table 2. Lower Basin Project Funding Based on Actual and Expected Costs (\$) 2015 Through 2019**

Lower Basin	DW	CAWCD	MWD	SNWA	USBR	Third-Party EDF	Total
Phase 1 2015	86,596.70	2,423,134.66	1,423,133.87	1,423,134.77	3,085,400.00	0.00	8,441,400.00
Phase 2 2016/2017	0.00	17,306.64	997,306.64	997,306.64	7,241,429.64	0.00	9,253,349.57
Phase 3 2018/2019	321,427.76	2,471,210.19	2,023,737.94	2,023,737.93	3,799,460.60	1,500,000.00	12,139,574.42
<b>Total</b>	<b>408,024.46</b>	<b>4,911,651.49</b>	<b>4,444,178.45</b>	<b>4,444,179.34</b>	<b>14,126,290.24</b>	<b>1,500,000.00</b>	<b>29,834,323.99</b>

## **II. System Conservation Pilot Program Upper Basin (SCPP)**

### **A. Institutional Framework**

Reclamation projects in the Upper Basin are administered pursuant to reclamation and other Federal law consistent with state law, as applicable. Reclamation's Upper Colorado Basin Region performs the Secretary's responsibilities on the Colorado River pursuant to the compendium of documents known as the Law of the River as it applies to Upper Basin Reclamation project operations. Reclamation facilitates water management and development of the Upper Basin through close consultation with the Upper Basin States and the UCRC.

### **B. Responsibilities of Reclamation's Upper Colorado Basin Region**

The Regional Director, Upper Colorado Basin Region represents the Secretary in administration of the Federal Reclamation projects within the Upper Colorado, Rio Grande, and Pecos River basins including major dams, reservoirs, diversion works, and other works. The Regional Director also directs the operation of the initial units authorized and constructed under CRSPA. The initial units of CRSP are the Glen Canyon Unit including Lake Powell; Flaming Gorge Unit; Wayne N. Aspinall Unit including Blue Mesa, Morrow Point, and Crystal reservoirs; and the Navajo Unit.

Reclamation projects in the Upper Basin annually supply 2.6 million acre-feet of water to agriculture, more than 260,000 acre-feet to municipal and industrial water users, and export more than 440,000 acre-feet of water to other basins. Hydroelectric power plants operated by Reclamation's Upper Colorado Basin Region have an installed capacity of 1,824 megawatts which is sufficient energy to meet the needs of approximately 1.3 million people. The largest hydroelectric power plant is Glen Canyon Power Plant with a capacity of 1,320 megawatts and an average annual generation of over 4 billion kilowatt-hours. Fifty-five recreation areas associated with Reclamation projects, including Flaming Gorge, Curecanti and Glen Canyon National Recreation Areas are visited by more than 8.7 million people annually. Reclamation projects in the Upper Colorado Basin Region also provide significant flood control and environmental benefits.

### **C. Colorado River Water Users in the Upper Basin**

As defined by the Colorado River Compact of 1922, the term, "Upper Basin" means:

*...those parts of the States of Arizona, Colorado, New Mexico, Utah and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River*

*System which are now or shall hereafter be beneficially served by waters diverted from the System above Lee Ferry.*

Upper Division States are the States of Colorado, New Mexico, Utah, and Wyoming. Article 3 of the Funding Agreement provides that the Upper Division States may participate in the Pilot Program. Each of these states have their own water right systems pursuant to state law. Under state law, water users obtain authorization to put water to beneficial use within their state. Upper Basin entities interested in implementing Pilot Program projects must be Upper Basin Colorado River Water Users, defined in subarticle 4.12 of the Funding Agreement as a person or entity within an Upper Division State that has an existing authorization under applicable state law to divert Colorado River System water as reasonably required for beneficial uses.

## **D. Pilot Program in the Upper Basin**

### **Administration of the Pilot Program in the Upper Basin**

As noted above, the UCRC was identified by the Upper Division States as the contracting entity for the Pilot Program in the Upper Basin. The UCRC passed a resolution on December 10, 2014 committing to the development of drought contingency plans and, as part of that effort, supporting pilot programs such as those contemplated under the Funding Agreement. The December 10, 2014 UCRC resolution is attached in Appendix E herein. Upper Basin interests recognized that the UCRC could best coordinate and facilitate the rights and obligations of the signatories under the Upper Colorado River Basin Compact of 1948, and ensure the greatest opportunity for success, development, and implementation of the Pilot Program in the Upper Basin. The UCRC, Local Funding Agencies, and Reclamation's Upper Colorado Basin Region entered into an Agreement to Facilitate the System Conservation Pilot Program in the Upper Colorado River Basin on May 13, 2015 (Facilitation Agreement). The Facilitation Agreement is attached in Appendix F herein. Pursuant to the Facilitation Agreement, UCRC provides coordination and administration of the Pilot Program with staff assistance from the Upper Division States, Reclamation's Upper Colorado Basin Region, and a consultant retained to assist with program outreach, initial proposal evaluation, creation and monitoring of project verification plans and development of the UCRC report on the SCPP.<sup>16</sup> On June 20, 2018, the UCRC adopted a resolution to temporarily cease acting as the contracting entity for the SCPP after fulfilling its commitments through 2018. The action of the UCRC effectively suspended the SCPP in the Upper Basin after 2018, so that the UCRC could focus its efforts on investigating outstanding considerations related to a potential demand management program.<sup>17</sup>

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<sup>16</sup> The UCRC's "Final Report Colorado River System Conservation Pilot Program In The Upper Colorado River Basin" for 2015 through 2017, and the "2018 System Conservation Pilot Program Update" are available at <http://www.ucrccommission.com/system-conservation-pilot-program/>

<sup>17</sup> The Upper Division States and the UCRC are investigating the feasibility of demand management, including a potential Upper Basin Demand Management Program, pursuant to the Upper Basin Drought Management Storage Agreement, dated May 20, 2019, a component of the Upper Basin Drought Contingency Plan.

## **Notification of Funding Opportunity for Voluntary Participation in a System Conservation Pilot Program**

The UCRC, in consultation with Upper Division States and Local Funding Agencies, prepared RFPs and application forms for potential participants in the Pilot Program. The RFPs were posted on the Upper Basin States' and UCRC's websites with contact information for UCRC and state staff overseeing the Pilot Program. Staff of the Upper Division States and UCRC reached out to potential project participants to inform them of the RFPs and assist with applications. Focused outreach from representatives of Trout Unlimited (TU) and The Nature Conservancy (TNC) also helped to enroll several agricultural applicants.

RFPs were posted on May 8, 2015; September 30, 2015 (for 2016 projects); September 30, 2016 (for 2017 projects); and October 2, 2017 (for 2018 projects). The RFPs explain the Pilot Program objectives, key principles, the information requirements for the proposals, and eligibility requirements. Specific requirements included but were not limited to:

- Proposals must be in writing and submitted to the UCRC or state office issuing the RFP in the state within which the proposed project is to be located
- A project description reflecting a feasible and quantifiable reduction in consumptive use or loss of Colorado River water in sufficient detail to enable the UCRC, Reclamation, and the Local Funding Agencies to evaluate the proposal and compare its costs and benefits to other proposals
- Project location
- For the water that is to be conserved, identify the historical and current type of use and volume of use
- Water rights associated with the water to be conserved
- Estimated volume of system conservation water and the method to be used to quantify and verify the volume of system conservation water created
- A monitoring and verification plan to ensure the conservation activities are implemented
- Time frames for project startup and project duration
- Evidence of recent history of water use over a 3- to 5-year period for the water to be conserved
- Amount of funding requested

The RFPs for 2015, 2016, 2017, and 2018 provided potential applicants with approximately 40, 32, 60, and 30 days respectively to submit project proposals. SCPP project proposals submitted to UCRC and the Upper Division States were collected by the UCRC consultant for initial review against submission criteria and were evaluated in terms of feasibility. The proposal listing was presented to a technical and legal committee (SCPP Team) made up of representatives of UCRC, Upper Basin States, Local Funding Agencies, and Reclamation's Upper Colorado Basin Region. In addition to the criteria in the Funding Agreement, other selection criteria included:

- Ability to demonstrate the efficacy of a new conservation method
- Complexity or level of administration involved in project implementation and verification
- Diversity of geographic location of system conservation projects



- Identified environmental benefits
- Demonstrated commitment to project success
- Diversity in the types of water conservation methods
- Funding availability in conjunction with consideration of other proposed projects

The SCPP Team convened after each round of RFPs to review proposals and select projects to be implemented based on how well a project proposal or application met the Pilot Program criteria and the amount of funding available. Some projects required additional information to be submitted and/or further negotiations regarding project cost. Upon selection of a proposed project, Local Funding Agencies entered into project specific funding agreements with UCRC and UCRC entered into an SCIA with the project participant.

### **Project Verification**

The UCRC consultant and SCPP Team worked with project participants to establish project specific verification plans that were included in the SCIA between a participant and the UCRC. Each plan outlined procedures to verify and document that the applicant performed the conservation measures and complied with the schedule indicated in the SCIA. Verification conducted for each project included an estimate of the volume of system conservation water conserved by the project based upon a consumptive use analysis completed at the end of the year. To develop the consumptive use estimates, real time climate data from a nearby climate station were utilized. Consumptive use estimates were adjusted for differences in water supply due to seasonal hydrology and accounted for the nature and priority of a project participant's water right(s). The verification plans relied upon measuring devices where available, primarily flumes or other diversion measurement devices at river or farm headgates. To verify full or split season deficit irrigation, field site visits were conducted to visually assess that water was not being applied to acreage enrolled in the Pilot Program project. Written documentation and photographs were produced for each site visit.

### **Pilot Program Projects in the Upper Basin**

#### ***Summary of Applications and Selected Projects***

The water user response to SCPP RFPs demonstrates that Upper Colorado River Water Users are interested in and are willing to participate in a system conservation program. While some applications failed to meet selection criteria, from 2015 through 2018, the number of applications submitted exceeded the number of projects awarded largely due to funding limitations. Figure 5 on the following page summarizes the total number of applications received, the number of projects selected each year, and the total cost of projects.

In the first year, 2015, the Pilot Program started relatively late in the year due to the need to identify a contracting entity and establish administrative procedures for implementation. Thus, when the RFP was issued on May 8, 2015, many agricultural irrigators had already made cropping decisions for the season. As a result, only 15 applications were submitted from three out of four Upper Division States. In 2017, 5 fewer projects were selected compared to 2016; however, the volume of system conservation water created per project and the associated project costs of the 2017 projects increased. In 2017, many applicants pooled their projects together as a single project and provided a project administrator for the pooled projects. Pooling smaller

projects together into one project increased project scale and decreased the administrative work load on the UCRC as the contracting entity. Table 3 below and Table 4 on page 27 provide an overview of the number of applications received relative to the number of projects implemented in each Upper Division State, by year.

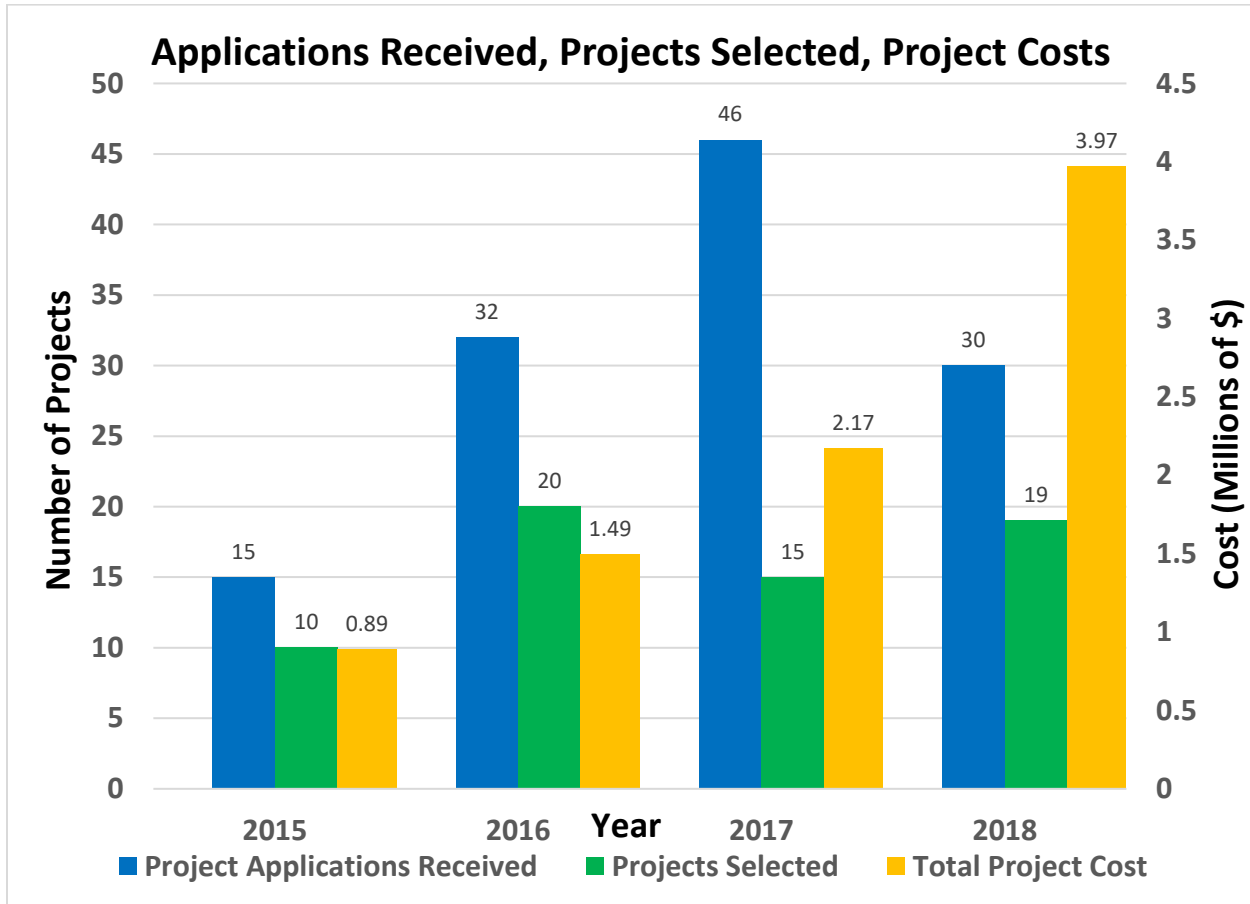


Figure 5 - Number of applications received, projects selected, and total cost of selected projects.

Table 3 – Total Number of Applications Received in Each Year by State

Year	Colorado	New Mexico	Utah	Wyoming	Total
2015	6	0	1	8	15
2016	17	3	2	10	32
2017	12	4	8	22	46
2018	5	4	12	9	30
Totals	40	11	23	49	123

**Table 4 – Total Number of Projects Implemented in Each Year by State**

<b>Year</b>	<b>Colorado</b>	<b>New Mexico</b>	<b>Utah</b>	<b>Wyoming</b>	<b>Total</b>
<b>2015</b>	5	0	0	5	10
<b>2016</b>	8	2	1	9	20
<b>2017</b>	2	3	6	4	15
<b>2018</b>	2	3	6	8	19
<b>Totals</b>	<b>17</b>	<b>8</b>	<b>13</b>	<b>26</b>	<b>64</b>

In 2016 and 2017, applications doubled and tripled respectively over the first year (2015) and included projects in all Upper Division States. Upper Colorado River Water Users in Colorado and Wyoming submitted the most applications throughout the duration of the SCPP. The success in these two states and the increased number of applications in Utah and New Mexico is attributed to focused outreach. In 2016, 25 projects were selected; however, only 20 project participants entered an SCIA and implemented projects. Five applicants chose not to participate for various reasons including complications involving multiple property owners and pending property sales. In 2018, the Upper Division States and UCRC modified the selection criteria to attract projects that were different from previously selected projects in terms of location and water conservation methods.

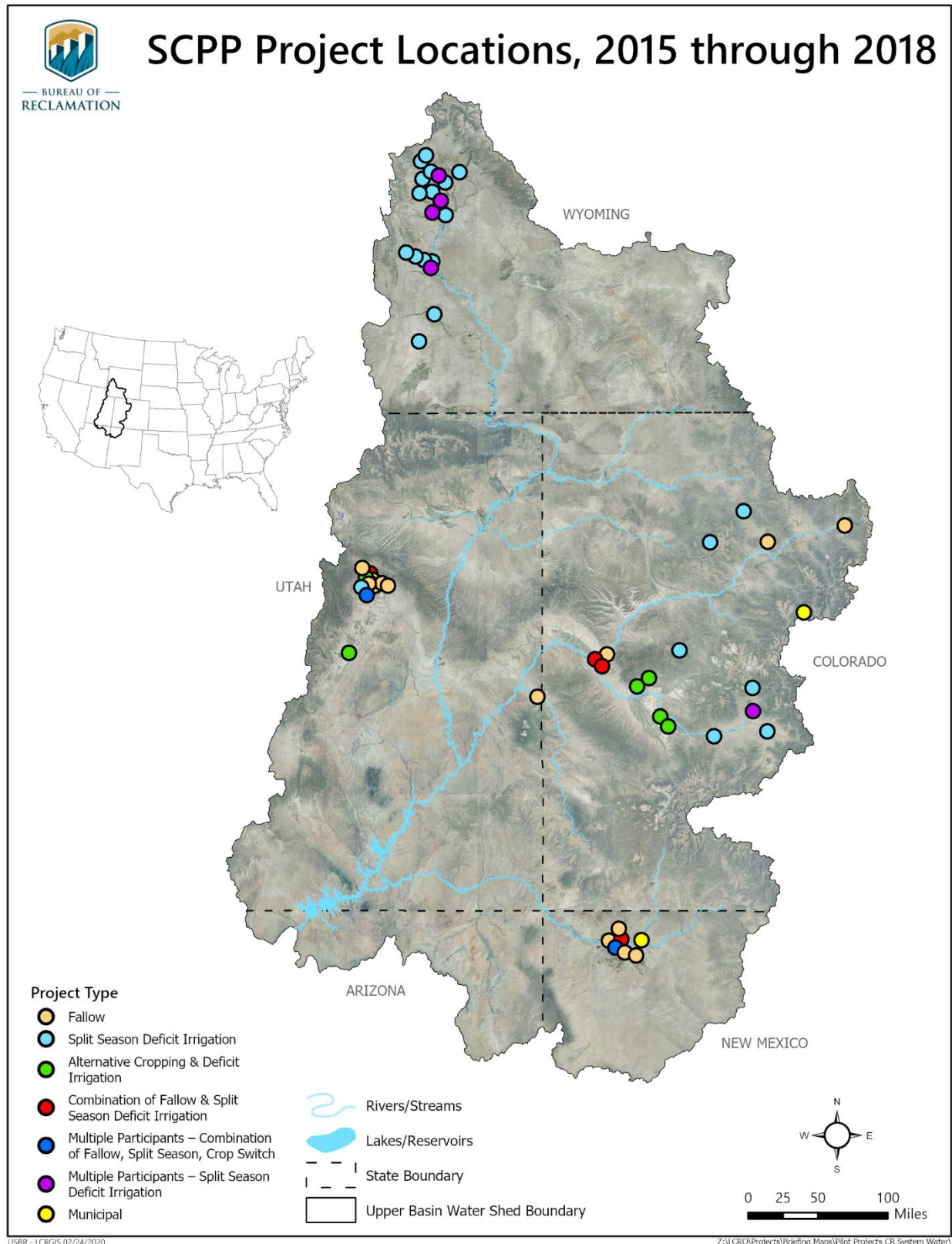
Table 5 below highlights the different project types implemented in each year. For the agricultural fallowing projects, no irrigation water was applied to the enrolled fields for the duration of the irrigation season. Regarding the split season deficit irrigation projects, no irrigation water was applied during a specified period of the irrigation season (e.g., June 1 through September 30). Some of the projects performed both full season fallowing (referred to as “Fallow” in Table 5) and split season deficit irrigation on different fields. The municipal projects include both outdoor and indoor municipal water use.

**Table 5 – Types of Projects Implemented in 2015, 2016, 2017, and 2018**

<b>Project Type</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Total</b>
<b>Fallow</b>	1	1	6	8	16
<b>Split Season Deficit Irrigation</b>	6	14	5	9	34
<b>Alternative Cropping &amp; Deficit Irrigation</b>	1	4	1	0	6
<b>Combination of Fallow &amp; Split Season Deficit Irrigation</b>	1	0	3	2*	6
<b>Municipal</b>	1	1	0	0	2

\* 2018 Projects of this type also included alternative cropping.

Figure 6 on the following page indicates the locations of the selected projects and project type in 2015 through 2018. Six of the projects were multi-year projects and for seven of the projects, the participants applied and were selected in multiple years, often enrolling different fields within the same farm or ranch.



**Figure 6. SCPP project locations, 2015 through 2018.**

### ***Estimation of System Conservation Water Created and Compensation***

Compensation for SCPP participants was based on an estimated volume of conserved water created by the project. Estimates of a participant's conserved water were based on average historical consumptive use which accounts for hydrologic variability as well as water supply limitations. For some Upper Colorado River Water Users, variability of the physical supply of water may be significant during a growing season. Certain Upper Colorado River Water Users may experience late season water supply shortages. More specifically, for one project, the consumptive use estimates were agreed upon based on historical consumptive use estimates provided for a pending water right court case. Additionally, for another project, the consumptive use estimate was based on an actual estimate of conserved water generated by the project during its enrollment in the SCPP.

Methods for estimating expected system conservation water to be created on a consumptive use basis vary by state depending on data availability and methodology that is acceptable within the state where the project was located. Regarding water supply limitations, different methods were used to adjust the estimated volume of water to be conserved on a consumptive use basis for a particular project based on the approved methodology in the applicable state and the availability of data. For example:

- **Colorado:** Average water supply limitations were applied based on historical diversions and associated shortages calculated using the state's consumptive use model. In Colorado, diversions are measured, recorded, and publicly available in the state's database; therefore, water supply limitations can be readily quantified.
- **New Mexico:** Average water supply limitations were applied based on discussions with the State Engineer's Office. Not all diversions are measured or recorded; therefore, State Engineer's Office staff provided supply limitation estimates.
- **Utah:** Average water supply limitations were applied based on discussions with the State Engineer's Office. As in New Mexico, not all diversions are measured or recorded; therefore, State Engineer's Office staff provided supply limitation estimates.
- **Wyoming:** Average water supply limitations were applied based on regulation dates (priority) and discussions with the State Engineer's Office. The State Engineer's Office uses Mapping Evapo-Transpiration with High Resolution and Internalized Calibration (METRIC) estimates which are based on 2011 data. One should note that Wyoming experienced a relatively wet year in 2011. In Wyoming, diversions are generally not recorded except on tributaries that require frequent regulation.

Tables 6 through 9 on the following pages show the estimated volume of system conservation water to be created on a consumptive use basis by tributary, and associated compensation for projects awarded in each program year. Details for multi-year projects are reported in the year of project activity. Between 2015 and 2018, as the Pilot Program proceeded, average cost per acre-foot of system conservation water on a consumptive use basis decreased. The Local Funding Agencies, Reclamation, and non-governmental organizations (NGOs) provided \$8,521,384 to conserve 47,280 acre-feet of water in 2015 through 2018 at an average cost of approximately \$180 per acre-foot.

**Table 6 – 2015 Estimated Volume of System Conservation Water and Compensation for Upper Basin Phase 1 Projects**

<b>Tributary Name</b>	<b>State</b>	<b>Total Acreage</b>	<b>Crop</b>	<b>Project Type and Duration</b>	<b>System Conservation (AF)</b>	<b>Cost per AF</b>	<b>Total Cost</b>
Fontenelle Creek	WY	221	Grass Pasture	Split Season Deficit Irrigation	248	\$200	\$49,600
Cottonwood Creek	WY	1,736	Grass Pasture	Split Season Deficit Irrigation	1,202	\$200	\$240,492
Middle Piney Creek	WY	40	Grass Pasture	Split Season Deficit Irrigation	32	\$200	\$6,313
Middle Piney Creek	WY	101	Grass Pasture	Split Season Deficit Irrigation	88	\$200	\$17,563
Pine Creek	WY	81	Grass Pasture	Split Season Deficit Irrigation	74	\$200	\$14,832
Uncompahgre River	CO	23	Corn	Fallow	46	\$300	\$13,650
Yampa River	CO	193	Grass Pasture	Split Season Deficit Irrigation	188	\$200	\$37,600
Colorado River – Grand Valley	CO	200	Corn & Alfalfa	Fallow	334	\$330	\$110,220
Various tributaries on Colorado's West Slope	CO	51	Grass Pasture & Alfalfa	Combination of Fallow & Split Season Deficit Irrigation	118	\$300	\$36,501
<b>Total</b>	-	<b>2,646</b>	-	-	<b>2,330</b>	-	<b>\$526,771</b>

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 7 – 2016 Estimated Volume of System Conservation Water and Compensation for Upper Basin Phase 2 Projects**

Tributary Name	State	Total Acreage	Crop	Project Type	System Conservation (AF)	Cost per AF	Total Cost
San Juan River	NM	-	-	Municipal (outdoor)	39 <sup>A)</sup>	\$190	\$7,391
Animas & San Juan Rivers	NM	58	Grass Pasture	Fallow	152	\$200	\$30,366
Ferron Creek	UT	240	Alfalfa & Grass Pasture	Fallow	517	\$200	\$103,380
Fontenelle Creek	WY	381	Grass Pasture	Split Season Deficit Irrigation	466	\$200	\$93,200
Cottonwood Creek	WY	726	Grass Pasture	Split Season Deficit Irrigation	482	\$200	\$96,400
Middle Piney Creek	WY	1,240	Grass Pasture	Split Season Deficit Irrigation	1,135	\$200	\$227,000
Middle Piney Creek	WY	184	Grass Pasture	Split Season Deficit Irrigation	178	\$200	\$35,600
South Fork Horse Creek	WY	1,103	Grass Pasture	Split Season Deficit Irrigation	1,226	\$200	\$245,200
South Cottonwood Creek	WY	1,631	Grass Pasture	Split Season Deficit Irrigation	1,143	\$200	\$228,600
Pine Creek	WY	82	Grass Pasture	Split Season Deficit Irrigation	70	\$200	\$14,000
Ham's Fork River	WY	292	Grass Pasture	Split Season Deficit Irrigation	395	\$200	\$79,000
Black's Fork River	WY	40	Grass Pasture	Split Season Deficit Irrigation	105	\$200	\$21,000
Uncompahgre River	CO	44	Alfalfa, Corn, Beans, Clover	Alternative Cropping & Deficit Irrigation	96 <sup>B)</sup>	\$200	\$19,250
Uncompahgre River	CO	10	Alfalfa, Corn & Clover	Alternative Cropping & Deficit Irrigation	20	\$200	\$4,000
Uncompahgre River	CO	12	Alfalfa & Triticale	Alternative Cropping & Deficit Irrigation	24	\$200	\$4,800
Uncompahgre River	CO	23	Winter Wheat	Alternative Cropping & Deficit Irrigation	29	\$250	\$7,350
Surface Creek	CO	67	Alfalfa & Grass Pasture	Split Season Deficit Irrigation	125	\$250	\$31,250
East River	CO	106	Grass Pasture	Split Season Deficit Irrigation	98	\$200	\$19,674
Tomichi Creek	CO	165	Grass Pasture	Split Season Deficit Irrigation	100	\$200	\$20,000
Little Cimarron River	CO	195	Grass Pasture	Split Season Deficit Irrigation	170	\$161	\$27,375
Milk Creek	CO	94	Alfalfa & Grass Pasture	Split Season Deficit Irrigation	84	\$200	\$16,760
Colorado River – Grand Valley	CO	200	Corn & Alfalfa	Fallow	334	\$330	\$110,220
South Fork Eagle River <sup>C)</sup>	CO	-	-	Municipal	200	\$670	\$134,132
<b>Total</b>	-	<b>6,893</b>	-	-	<b>7,188</b>	-	<b>\$1,575,948</b>

**A) The estimated consumptive use is for the lifetime of the project (approximately 20 years)**

**B) Compensated on actual practice and associated consumptive use**

**C) Project was selected in 2015 and implemented in 2016. Due to considerations specific to this project, it was funded at a higher rate than others.**

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 8 – 2017 Estimated Volume of System Conservation Water and Compensation for Upper Basin Phase 3 Projects**

Tributary Name	State	Total Acreage	Crop	Project Type	System Conservation (AF)	Cost per AF	Total Cost
Animas & San Juan Rivers	NM	125	Alfalfa & Corn	Combination of Fallow & Split Season Deficit Irrigation	298	\$190	\$56,679
Animas & San Juan Rivers	NM	40	Grass Pasture	Fallow	95	\$190	\$18,103
San Juan River	NM	1,286	Alfalfa, Corn & Pinto Bean	Fallow	2,930	\$219	\$635,242
Ferron Creek	UT	240	Alfalfa & Grass Pasture	Alternative Cropping & Deficit Irrigation	381	\$200	\$76,248
Price River	UT	28	Alfalfa & Oat	Alternative Cropping & Deficit Irrigation	58	\$190	\$10,992
Price River	UT	371	Alfalfa & Small Grain	Fallow	923	\$190	\$175,332
Price River	UT	152	Alfalfa & Grass Pasture	Combination of Fallow & Split Season Deficit Irrigation	311	\$190	\$59,157
Price River	UT	186	Grass Pasture	Fallow	372	\$190	\$70,674
Price River	UT	159	Alfalfa	Split Season Deficit Irrigation	228	\$190	\$43,341
Price River	UT	27	Alfalfa & Grass Pasture	Fallow	67	\$190	\$12,675
Fontenelle Creek	WY	275	Grass Pasture	Split Season Deficit Irrigation	407	\$190	\$77,330
Fontenelle Creek	WY	492	Grass Pasture	Split Season Deficit Irrigation	540	\$190	\$102,600
Fontenelle Creek	WY	717	Grass Pasture	Split Season Deficit Irrigation	714	\$190	\$135,660
Fontenelle Creek	WY	878	Grass Pasture	Split Season Deficit Irrigation	1,083	\$190	\$205,770
Colorado River	CO	1,252	Alfalfa & Corn	Combination of Fallow & Split Season Deficit Irrigation	3,226	\$165	\$525,000
Colorado & Fraser Rivers	CO	348	Grass Pasture	Fallow	233	\$190	\$44,300
Colorado River – Grand Valley	CO	200	Corn & Alfalfa	Fallow	334	\$330	\$110,220
Uncompahgre River	CO	10	Alfalfa, Corn & Clover	Alternative Cropping & Deficit Irrigation	20	\$200	\$4,000
Uncompahgre River	CO	12	Alfalfa & Triticale	Alternative Cropping & Deficit Irrigation	24	\$200	\$4,800
<b>Total</b>	-	<b>6,798</b>	-	-	<b>12,244</b>	-	<b>\$2,368,123</b>



Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 9 – 2018 Estimated Volume of System Conservation Water and Compensation for Upper Basin Phase 4 Projects**

Tributary Name	State	Total Acreage	Crop	Project Type	System Conservation (AF)	Cost per AF	Total Cost
Egeria Creek	CO	1,941	Grass Pasture	Fallow	2,811	\$150	\$421,650
Tomichi Creek	CO	721	Grass Pasture	Split Season Deficit Irrigation	631	\$79	\$50,000
Uncompahgre River	CO	10	Alfalfa, Corn & Clover	Alternative Cropping & Deficit Irrigation	20	\$200	\$4,000
Uncompahgre River	CO	12	Alfalfa & Triticale	Alternative Cropping & Deficit Irrigation	24	\$200	\$4,800
Animas & San Juan Rivers	NM	64	Alfalfa	Combination of Fallow & Split Season Deficit Irrigation	169	\$150	\$25,281
Animas & San Juan Rivers	NM	154	Alfalfa & Corn	Fallow	358	\$150	\$53,775
San Juan River	NM	1,656	Variety	Fallow	3,626	\$219	\$793,985
Ferron Creek	UT	240	Alfalfa & Grass Pasture	Alternative Cropping & Deficit Irrigation	381	\$200	\$76,248
Two Mile Creek	UT	250	Alfalfa Grass Mix	Fallow	183	\$150	\$27,516
Price River	UT	1,199	Variety	Combination of Fallow & Split Season Deficit Irrigation	2,313	\$150	\$347,015
Price River	UT	50	Alfalfa	Fallow	126	\$140	\$17,664
Price River	UT	51	Alfalfa	Fallow	129	\$140	\$18,017
Price River	UT	9	Alfalfa	Fallow	22	\$140	\$3,031
Price River	UT	53	Alfalfa and Grass Pasture	Fallow	132	\$140	\$18,487
Cottonwood Creek	WY	1,407	Grass Pasture	Split Season Deficit Irrigation	966	\$150	\$144,967
Fontenelle Creek	WY	2,552	Grass Pasture	Split Season Deficit Irrigation	3,087	\$150	\$463,013
Horse Creek	WY	616	Grass Pasture	Split Season Deficit Irrigation	900	\$150	\$135,048
Middle and South Piney Creek	WY	4,777	Grass Pasture	Split Season Deficit Irrigation	4,936	\$150	\$740,430
Green River	WY	1,057	Grass Pasture	Split Season Deficit Irrigation	678	\$150	\$101,700
Muddy Creek	WY	151	Grass Pasture	Split Season Deficit Irrigation	127	\$150	\$19,050
North Piney Creek	WY	3,183	Grass Pasture	Split Season Deficit Irrigation	3,240	\$150	\$486,015
North Cottonwood Creek	WY	555	Grass Pasture	Split Season Deficit Irrigation	659	\$150	\$98,850
<b>Total</b>	-	<b>20,708</b>	-	-	<b>25,518</b>	-	<b>\$4,050,542</b>

### **Summary of the SCPP Consumptive Use Analyses**

Following completion of SCPP projects, consumptive use analyses were performed to better quantify the volume of system conservation water each SCPP project created as compared to the volume initially estimated in the project proposal or application. Similar to the average historical consumptive use estimates developed for each project application, the consumptive use analyses included in the verification plans also used climate data from a climate station identified for each SCPP project. These more detailed post project analyses sometimes resulted in a finding that either more or less water was conserved compared to the historical average consumptive use estimates that were agreed upon in the SCIA. Table 10 below summarizes the total estimated water conserved on a consumptive use basis in each year of the SCPP. The initial and post project water conservation estimates were not expected to be the same. The initial estimate was based on average historic consumptive use across multiple crop types and hydrologic conditions. The post project estimate was based on an estimated consumptive use for one type of crop and hydrologic condition. Additional differences between the initial water conservation estimates provided in the project proposal and the post project estimates are most likely due to climatic factors and associated water supply limitations which occurred during the term of a project. The post project analyses were for study purposes only and did not impact participant compensation. A summary of the analyses by year is provided in Table 10 below.

**Table 10 – Initial vs Post Project Estimates of System Conservation Water Creation on a Consumptive Use Basis by Water Year**

SCPP Year	Initial Water Conservation Estimate (AF)	Post Project Water Conservation Estimate (AF)
2015	2,330	2,707
2016	7,188	7,852
2017	12,244	12,690
2018	25,518	27,804
<b>Total</b>	<b>47,280</b>	<b>51,053</b>

### **System Conservation Pilot Program Project Monitoring**

As part of the project selection criteria, the SCPP included a qualitative monitoring component separate from verification. The terms “monitoring” and “verification” hold distinct meanings within the context of the SCPP, as defined below:

**Verification** refers to project compliance – verifying that the participants’ performance complies with performance requirements in the SCIA.

**Monitoring** is an assessment of the likelihood that system conservation water is stored in Lake Powell as Colorado River System water. Verifying whether system conservation water reaches Lake Powell was not a goal of the SCPP and such verification requires the development of additional accounting and measurement methods. Among the Upper Division States, water allocation and use is governed by state law and prior appropriation doctrine. Should a water user forego its right to divert water, the water remains in the

stream and may be diverted by the water right holder next in priority. System conservation water created under the SCPP can be intercepted by a downstream diverter before the system conservation water can reach Lake Powell. A term that relates to the protection of system conservation water from being diverted before it reaches Lake Powell is known as “shepherding”. Legal mechanisms in the Upper Basin need to be developed to ensure that system conservation water is not consumed by other water users. The monitoring assessment, therefore, is based on an evaluation of whether the conserved water is likely to flow to the mainstream or to one of the larger mainstream tributaries. Projects were ranked “high” if the conserved water was likely to flow to Lake Powell or another CRSP reservoir. Alternatively, projects were ranked “low” when the probability that the conserved water would flow to Lake Powell was low or uncertain. Those projects for which water could flow to Lake Powell but only through shepherding, were ranked as “medium.” Mainstream tributaries include the Yampa River, White River, Green River, Gunnison River, and the San Juan River. The number of intervening water users who were located between an SCPP project and Lake Powell and who could legally divert system conservation water was also considered.

Of the implemented SCPP projects in 2015, 2016, and 2017, approximately 71 percent were ranked “medium” to “high” in terms of the likelihood of the system conservation water created by the projects reaching Lake Powell. Approximately 68 percent of the estimated volume of water conserved for 2018 projects was believed to have a “medium” to “high” likelihood of reaching Lake Powell. Development of additional methods and tools to track and monitor all system conservation water created from the SCPP project location to Lake Powell as well as new legal mechanisms to protect system conservation water from diversion prior to reaching Lake Powell is necessary. This issue is discussed in Section V. Findings and Recommendations.

In addition, quantitatively tracking system conservation water requires the development of additional accounting tools because the volumes of system conservation water created and left in the stream were very small relative to flows in the mainstream tributaries and storage levels in Lake Powell. For example, in 2015, an estimated 2,330 acre-feet of system conservation water was conserved in the Upper Basin which is equivalent to 0.01 percent of the active storage in Lake Powell and 0.03 percent of the 2015 inflow to Lake Powell.

### **Findings Specific to the Upper Basin**

Determination of participants’ historical consumptive use of water and the proposed volume of system conservation to be created on a consumptive use basis under the SCPP was based upon historical consumptive use data and availability of water supply at each participant project location. In certain locations, water supply may be severely limited or curtailed for all or part of a growing season. The parties to the Funding Agreement desired to ensure that participants were compensated for water conserved by a purposeful reduction in consumptive use rather than a reduction in consumptive use due to a water shortage. Variability in water supply also made identification of a standard period to derive average consumptive use for a participant difficult. Estimated consumptive use based on soil moisture was also calculated. In the future, crop rotation data should also be required to be submitted in the application and that data should be used in the consumptive use estimates. In the four Upper Division States, estimates of historical consumptive use were adjusted as appropriate for water supply limitations. The estimation of consumptive use led to the findings discussed on the following pages.

The availability of data, including irrigated acreage, crop type, and diversion records, is inconsistent throughout the Upper Division States. Different methods, therefore, were used in each state to estimate the historical consumptive use and expected system conservation on a consumptive use basis reflected in the applications. Given the variation in data and resources in each state, implementing a standard method for estimating consumptive use was not possible. Future efforts to estimate consumptive use could benefit by including on-farm instrumentation to measure irrigated and non-irrigated field water use, or a remote sensing method, such as METRIC. Future analysis should be conducted to identify the data constraints in each state, understand how the various methods to estimate consumptive use differ from one another, document the assumptions used to estimate water supply limitations, and develop suitable methods to calculate estimated consumptive use and associated conservation in each state.

Participants in the program were compensated for creation of system conservation by reducing their consumptive use of water during the term of the project as compared to their historical consumptive use. Because water availability in the Upper Basin is highly dependent on hydrologic year type (condition), an “average” or “likely” consumptive use for estimating funding requirements for application review must be considered. The number of years of data included in a historical consumptive use analysis to estimate average consumptive use for the application varied from 5 years to 25 years of data. When applications were being considered and selected, the upcoming hydrologic conditions were unknown. An average historical consumptive use was estimated as the basis of payment with the understanding that risk of over or under compensation would be shared by the funders and the applicant. Another option would be to have the applicant provide historical consumptive use representing a range of hydrologic conditions where that information is available and tie it to different levels of compensation. Alternatively, participants could be compensated based on the actual volume of system conservation water created on a consumptive use basis after the project concluded.

The SCPP did not specify land management standards for fallowed fields (for example, implementing wind erosion control measures, or managing/controlling weed and plant growth). Three of the projects, however, voluntarily implemented such measures. The full extent of these land management strategies likely can only be implemented on fields that grow annual crops such as corn rather than perennial crops such as alfalfa and grass pasture. A scaled version of these measures, however, may be considered as a requirement on fields that grow both annual and perennial crops to reduce wind erosion and dust.

Ditch size greatly influences how conserved water can be accounted for in a system conservation program. For projects diverting water on ditches with multiple water users, the following approaches were explored in the SCPP:

- For some of the projects, ditch companies that manage large ditches were involved in SCPP project activities. Fifteen agricultural projects in the Upper Basin (23 percent) were on large ditches in 2015 through 2018. The UCRC more frequently observed participation of entire ditch companies, or a majority of water users on a large ditch, in later phases of the SCPP. Where a ditch company did not participate, program participants diverted water at the river headgate consistent with common practice in the

absence of the SCPP. On-farm delivery headgates for fields enrolled in the SCPP were closed to ensure no water could be applied to those fields. Theoretically, the conserved water associated with the SCPP returned to the river via natural drainages or tailed back with ditch return flows. Verifying and quantifying whether the conserved water returned to the Colorado River System was infeasible given the lack of measurement devices on the large ditch systems. Many ditch companies currently lack the ability to change their practices or operations to accommodate system conservation programs due to lack of staff and financing and/or constraints posed by ditch company bylaws.

- Fourteen agricultural fallowing projects in the SCPP involve smaller ditches that have a handful of water users diverting water from the same river headgate. The ditch is not managed by a ditch company. For these projects, two categories were explored. In the first category, the water associated with the project fields was diverted at the river headgate and returned to the Colorado River System through natural drainages, spillways or the ditch tailback. Although the conserved water bypassed the fields enrolled in the SCPP, other ditch users may divert the water before it can be returned to the river. Eight agricultural projects in the Upper Basin (13 percent) were in this category in 2015 through 2018. In the second category, the diversions were reduced at the river headgate by a quantity equivalent to the participant's interest in the associated water rights. For verification, the participants closed their on-farm delivery headgates or pumps to ensure water was not applied to the fields enrolled in the SCPP. Reducing diversions at the river headgate is preferred because the water associated with the enrolled fields remains in the river eliminating the risk that it will be diverted by other users on the ditch before returning to the Colorado River System. Six agricultural projects in the Upper Basin (9 percent) were in this category in 2015 through 2018.

Some SCPP projects were located on small ditches in which the SCPP participant is the sole diverter. For these projects, the river headgates were closed; the diversion was foregone and the system conservation water remained in the river. Given the legal framework, however, the system conservation water was at risk of being diverted downstream prior to flowing into Lake Powell. Single water user ditch projects in the Upper Basin accounted for 25 (39 percent) of the agricultural projects selected in 2015 through 2018.

Two of the agricultural projects in the Upper Basin involved a storage component. In one of the projects, the enrolled fields were typically irrigated by diversion from the river into a large ditch and stored water released from a private reservoir operated by an association. The diversions at the river headgate occurred as they had prior to the SCPP. The participant's shares of the water stored in the ditch were not applied to the SCPP enrolled fields and remained in the ditch for use on other fields. A quantity of water equal to the estimated consumptive use from the participant's shares (125 acre-feet) in a private reservoir was not released for irrigation during Water Year 2016. The reservoir historically fills and empties each year. Carryover storage from 2016 would have resulted in an equivalent reduction of water stored in 2017. This project, which is in Colorado, required significant coordination with the State Engineer's Office to develop a plan that is consistent with Colorado water law. Initially, the project was developed such that the conserved water would remain in storage until the end of the irrigation season and then be released into the river in November to benefit low streamflows and minimize the risk of the

system conservation being diverted by downstream water users. This approach was infeasible under the State Engineer's administrative position that water may be released from a reservoir only for a decreed beneficial use. Therefore, the water was "carried over" to the next year which decreased the amount of water diverted from the river to the reservoir for storage in 2017. To incorporate similar projects in future system conservation programs, program administrators must work closely with the applicant, associated reservoir companies, and state water officials to develop legal approaches. In a similar project in Wyoming, the same approach was followed but the carryover water in the reservoir could not be measured due to lack of a measuring device at the reservoir. For future system conservation programs, program administrators must recognize the importance of measuring the amount of system conservation created.

One municipal project that involved both indoor and outdoor water use was selected in the SCPP. For this project, trans-basin diversions for municipal use outside the Colorado River Basin were reduced by 200 acre-feet. The project was unique because the foregone diversions were measured. Additional verification included assurance that the foregone diversions would have been diverted and used outside the Colorado River Basin.

One tribal project was selected and implemented in the Upper Basin in 2017 and 2018. On a consumptive use basis, the tribal project conserved the second highest volume of system conservation water created by an SCPP project. Reclamation anticipates that tribal projects may be able to create significant volumes of system conservation water.

The majority of the SCPP projects are well-defined in terms of identification of enrolled fields, irrigation practice (i.e., fallow or split season deficit irrigation), type of cover crop to be planted, if applicable, and start and end dates. To encourage participation, flexible irrigation practice and field rotation were explored. One project was selected in which the participant agreed to conserve between one acre-foot per acre and 2.5 acre-feet per acre of water. For the participant, this approach was more practical because it allowed flexibility to either fallow the enrolled fields or plant and partially irrigate a low water use cover crop depending on whether he could install a drip irrigation system. Administratively, this approach was more challenging since it required the funders to budget for the maximum payment and potentially reserve funding that could be used elsewhere. Additionally, the approach required extensive consultation with the participant. A multi-year project was selected in which the enrolled fields could be rotated each year if the annual volume of water conserved by fallowing different fields was the same. Administratively, the approach was feasible because the payment was the same each year; therefore, the contract did not have to be amended. However, a new Verification Plan was developed each year to reflect locations of the enrolled fields. Participants felt the flexibility was crucial because the land benefited from the rotational fallowing.

Negotiations with applicants regarding compensation raised the following questions:

- Should compensation across similar projects be consistent?
- How can the applicants develop competitive prices without an established market?
- How does a program like this refrain from setting market prices?
- If conserved water at the participant level cannot be protected throughout the Colorado River System, will continuing with similar projects create the

perception of compensation for participation rather than compensation for conserved water?

The following issues in the Upper Basin concern the legal framework for water rights and the ability to ensure that conserved water can benefit the Colorado River System while causing no injurious impact to water rights. In the Upper Basin, water delivered through a natural stream is legally protected from downstream users only if it is decreed or permitted for a state-approved beneficial use such as, but not limited to, municipal, agricultural, and instream flow uses. State water officials may need additional legal mechanisms and authorities to shepherd conserved water past intervening diversion structures, in some circumstances, to Lake Powell (or across a state line). To maximize the value of a water savings program for both funders and participants, conserved water should be accounted for and protected from downstream diversions. New legal mechanisms to shepherd the conserved water may require development at the state level. The protection of conserved water will be vital for a long-term demand management program where the Upper Division States may desire to receive credit or storage for system conservation.

Changes in irrigation and diversion practices reduce the availability of late season return flows, which may cause other water users to divert and call for more water. While the SSCP discussed the impacts of reduced late season return flows during the project selection process, no mechanism exists to account for and/or address such impacts. In a larger system conservation program, such impacts should be considered.

In some states, abandonment and forfeiture of a water right, in part or whole, due to SSCP participation was a concern for water users. If a long-term system conservation program is authorized, water users will need to be educated about the ramifications to water rights, if any, related to participation in system conservation programs. New legal mechanisms to protect the water rights of participants in system conservation programs may need to be developed at the state level.

Community outreach and education about the Pilot Program, SSCP, and acknowledgement of cultural perceptions and concerns dispelled misconceptions about impacts to local economies and water rights due to non-use of water. Consultation and collaboration with local water managers, operators, community residents, farmers, tribes, and NGOs is critical to program success. The community outreach conducted by TU and TNC among agricultural communities resulted in the agricultural sector submitting more SSCP applications than any other sector. NGO outreach was critical to the success of the program, particularly in the Upper Basin. Similar approaches could be supported and replicated to make system conservation more effective in the future. Table 11 on the following page highlights the importance of focused outreach by showing the percent of implemented projects that were associated with TU and TNC outreach.

**Table 11. Projects Associated with Focused Outreach**

<b>SCPP Year</b>	<b>% of Projects Associated with TU</b>	<b>% of Projects Associated with TNC</b>
<b>2015</b>	60%	10%
<b>2016</b>	50%	15%
<b>2017</b>	60%	7%
<b>2018</b>	68%	0%

Focused outreach to agricultural water users exceeded efforts to conduct outreach with water users in other sectors such as municipal and industrial sectors which may be a reason for limited project diversity in those sectors. Focused outreach could increase both geographic distribution of projects and diversity regarding project type.



### **III. Pilot System Conservation Program Lower Basin (PSCP)**

#### **A. Institutional Framework**

The Secretary is vested with the responsibility of managing the mainstream water of the lower Colorado River from Lee Ferry, Arizona, in the northern part of the Lower Basin to the Southerly International Boundary between the United States and Mexico. The Secretary's responsibilities are performed pursuant to a body of documents referred to as the Law of the River.

#### **B. Responsibilities of Reclamation's Lower Colorado Basin Region**

On behalf of the Secretary, the Lower Colorado Basin Region of Reclamation performs the Secretary's water master responsibilities for oversight and management of the lower Colorado River including major dams, reservoirs, diversion works, and other works. The Regional Director, Lower Colorado Basin Region, represents the Secretary as the water master and performs the oversight, administrative, and operational functions of the water master role.

Reclamation projects in the Lower Basin supply irrigation water to more than a million acres of land in the United States and Mexico and support the municipal and industrial water supply needs of more than 25 million people. Hydroelectric power plants at Hoover, Davis, Parker, Headgate Rock, and Senator Wash Dams generate nearly 6 billion kilowatt hours of electricity on average annually which is sufficient energy to meet the needs of over 500,000 western households. Fifteen major recreation areas, including the Lake Mead National Recreation Area, are located within the Lower Colorado Basin Region. The recreation areas, taken together, are visited by approximately 12 million people annually. Reclamation projects in the Lower Colorado Basin Region also provide significant flood control and environmental benefits.

#### **C. Colorado River Water Entitlement Holders in the Lower Basin**

In the Lower Basin, a Colorado River water entitlement is a right to divert and consumptively use Colorado River water within apportionments to Lower Division States. Colorado River water entitlements are obtained in three ways: 1) water delivery contracts with the Secretary pursuant to the Boulder Canyon Project Act of 1928, 45 Stat. 1057; 2) decreed rights by the United States Supreme Court in *Arizona v. California*, 547 U.S. 150 (2006); or 3) reservation of Colorado River water for Federal purposes by the Secretary, known as Secretarial Reservations. In the Lower Division States, Colorado River water entitlement holders include private persons and entities such as tribes, municipalities, water and irrigation districts, and commercial entities which can order Colorado River water for consumptive use in commercial agricultural irrigation or domestic uses including household, stock, municipal, mining, milling, industrial, and other

like purposes. Colorado River water entitlement holders are eligible to participate in Pilot Program projects.

## **D. Pilot Program in the Lower Basin**

### **Administration of the Pilot Program in the Lower Basin**

For PSCP projects, Reclamation's Lower Colorado Basin Region processed requests for and review of project proposals, entered into and administered SCIAs with Entitlement Holders selected for inclusion in the PSCP, and verified and documented consumptive use reductions under the PSCP consistent with the Funding Agreement.

### **Notification of Funding Opportunity for Voluntary Participation in a Pilot System Conservation Program**

Reclamation's Lower Colorado Basin Region, in consultation with Local Funding Agencies, prepared and mailed to Entitlement Holders, defined in subarticle 4.5 of the Funding Agreement, written notices of funding opportunities for PSCP projects and requests for project proposals. The Lower Colorado Basin Region mailed Entitlement Holders three funding opportunity notices dated October 5, 2014, March 25, 2016, and October 11, 2017. The mailing of each notice initiated a phase of the PSCP. The funding opportunity notices explain the PSCP objectives, key principles, the information requirements for the proposals, and eligibility requirements. Specific requirements of the proposals, which must be in writing and submitted to the Lower Colorado Basin Region, include but are not limited to the following:

- Project description reflecting a feasible and quantifiable reduction in consumptive use or loss of Colorado River water in sufficient detail to enable the Lower Colorado Basin Region and the Local Funding Agencies to evaluate the proposal and compare its costs and benefits to other proposals
- Proposed annual and total system conservation volumes and time frames
- How the volume of water to be conserved by a PSCP water conservation project and its storage in Lake Mead will be measured, quantified, and verified in acre-feet on a consumptive use basis
- Explanation of how the system conservation water created by the project would be stored in Lake Mead
- Evidence of recent history of use over a 3- to 5-year period for the water to be conserved
- Method for verification of volume of system conservation created and supporting information
- Amount of time necessary to implement the project and project duration
- Project costs and amount of funding requested

The first two notices of funding opportunities provided Entitlement Holders 30 days to submit project proposals; the third funding opportunity notice provided close to 60 days for preparation of proposals. Notwithstanding the stated deadlines for submission of proposals, Reclamation's Lower Colorado Basin Region allowed flexibility in submission of proposals often to accommodate water districts' need to convene meetings with farmers and to allow for all entities

to work within procedural time frames related to briefing and obtaining approval of local governing bodies such as water district boards of directors, town councils, and tribal councils.

In conjunction with noticing the Entitlement Holders, the Lower Colorado Basin Region mailed letters to the United States Section of the International Boundary and Water Commission (IBWC) on October 22, 2014, April 18, 2016, and October 23, 2017, asking the IBWC to inform representatives of Mexico about the opportunity for Colorado River water users in Mexico to participate in the PSCP. The PSCP is designed to ensure that Mexico, subject to its decision making and willingness, is eligible to participate in the PSCP to obtain funding for projects that would conserve Colorado River System water to enhance reservoir storage in Lake Mead. The funding opportunity notices mailed to Entitlement Holders were enclosed with the letter from the Lower Colorado Basin Region to the IBWC.

In addition to the above-referenced letters to IBWC, representatives of the Lower Colorado Basin Region met with IBWC management to brief them on the PSCP in September 2014. On October 28, 2014, the Lower Colorado Basin Region conducted a PSCP workshop in Mexicali, Mexico to encourage Mexican participation in the PSCP. Colorado River water users in Mexico ultimately did not submit proposals for participation in the PSCP.

### **Proposal Review and Selection of PSCP Projects**

The Lower Colorado Basin Region performs a preliminary review and analysis of proposals and prepares a ranking of PSCP project proposals based upon Pilot Program objectives, key principles, and selection criteria in accordance with the Funding Agreement. The Lower Colorado Basin Region may contact the potential participant to request clarification of the proposal or to obtain additional information. Written comments, analysis, and ranking of proposals by the Lower Colorado Basin Region is shared with the Local Funding Agencies. The Lower Colorado Basin Region and the Local Funding Agencies work closely together and jointly select PSCP projects. The Lower Colorado Basin Region and the Local Funding Agencies follow the selection criteria provided in subarticle 5.5 of the Funding Agreement and listed herein as eligibility requirements on the previous page. Environmental compliance pursuant to the National Environmental Policy Act of 1969 is completed before Reclamation executes an SCIA with a project participant.

### **Forbearance from Pilot Program Agreements**

A key principle of the Pilot Program is that system conservation will benefit the Colorado River System and will not accrue to the benefit or use of any individual Colorado River water user. Two-party agreements have been used in the Lower Basin to allow the conserved water to remain in Lake Mead as Colorado River System water. The two-party agreements are between Reclamation's Lower Colorado Basin Region and the surplus or unquantified contractor or junior priority water user (referred to as "two-party agreement contractor") for Colorado River water use located in the same state as the proposed PSCP project. Among other things, this agreement is a commitment from the two-party agreement contractor that it will not divert the system conservation water conserved by a specific PSCP project located in the same state. The agreement requires the two-party agreement contractor in the same state as the PSCP project to amend its Colorado River water order with Reclamation's Lower Colorado Basin Region to ensure that system conservation water created under a PSCP project remains in Lake Mead. Should the two-party agreement contractor fail to submit an amended Colorado River water

order to the Lower Colorado Basin Region, the agreement provides for the Lower Colorado Basin Region to deduct the amount of the conserved water from the amount of water available to the two-party agreement contractor in that year to ensure that the conserved water remains in Lake Mead. These agreements are generally attached to SCIAAs as exhibits. A template agreement is attached in Appendix D herein.

In California, due to the structure of the Colorado River water entitlement priority scheme, multiple Colorado River water entitlement holders generally are authorized to divert unused Colorado River water within California's apportionment. The Lower Colorado Basin Region and each of the applicable California Colorado River water users entered into two-party letter agreements in which each water user agreed not to order for diversion the system conservation created by the Pilot Program projects in California. The Lower Colorado Basin Region agreed to notify each forbearance letter agreement signatory in advance of contracting for future Pilot Program projects in California and each signatory reserved the right to notify the Lower Colorado Basin Region if they do not agree to the terms of the letter agreement with respect to a particular future project.

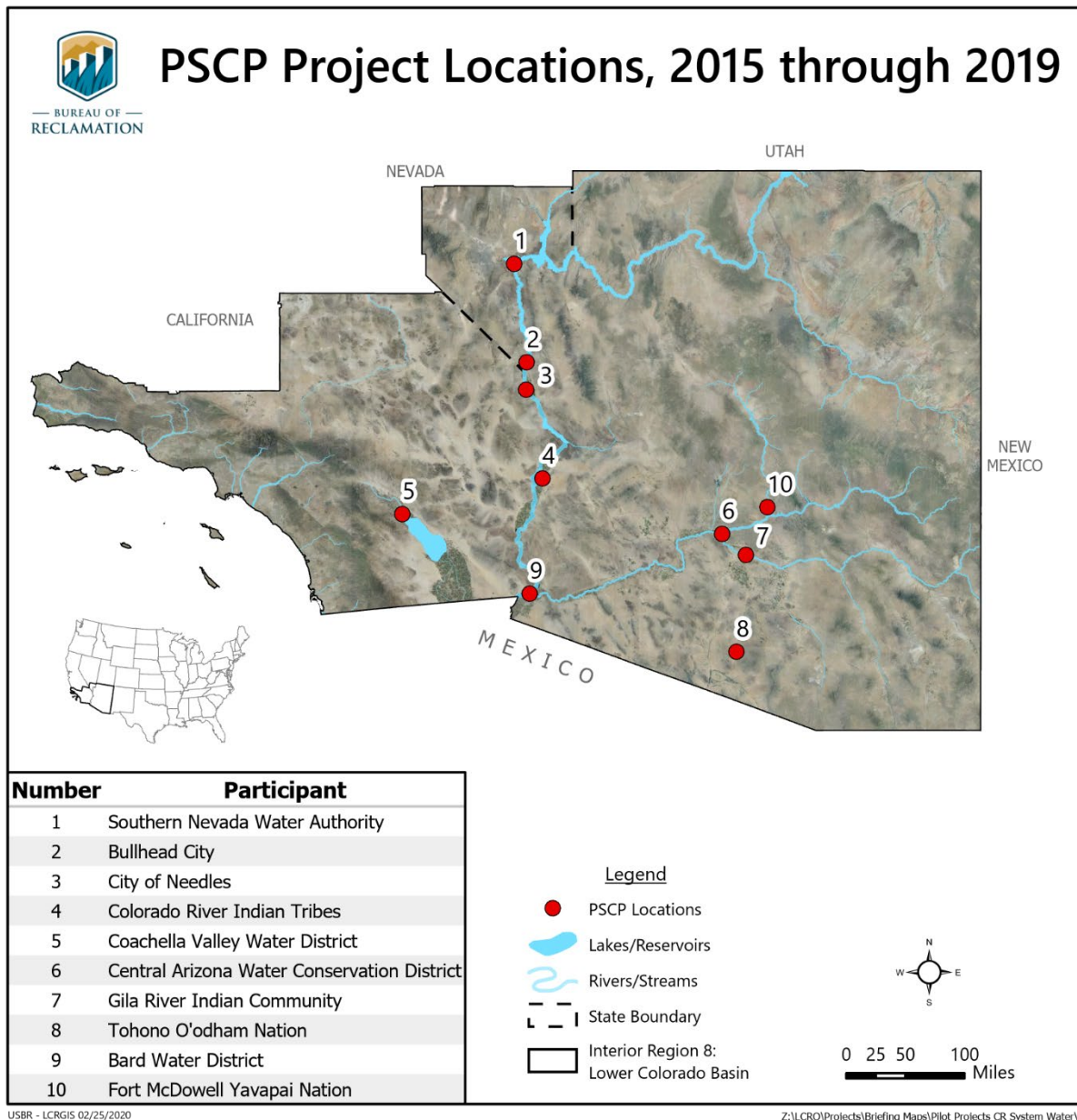
In Arizona, as the operator of the CAP, CAWCD has contracted with the Secretary for the delivery of CAP water from the Colorado River. Under the contract, the CAP Colorado River water entitlement is a junior priority in Arizona and the entitlement is unquantified. In addition to diverting Colorado River water to meet annual water orders pursuant to long-term CAP contracts and subcontracts, CAWCD may divert Colorado River water remaining within Arizona's annual apportionment after Arizona water users that are senior and equal in priority to the CAP have received their Colorado River water deliveries for a particular year. CAWCD enters into two-party letter agreements, referred to as forbearance agreements, with Reclamation's Lower Colorado Basin Region to indicate that it does not intend to take the conserved PSCP water as a delivery through its unquantified water delivery contract and instead, leave the conserved water in Lake Mead as Colorado River System water.

### **PSCP Projects in the Lower Basin**

On the following page, Figure 7 depicts the locations of PSCP projects in the Lower Division States from 2015 through 2019.

#### ***Phase 1 Projects***

Six project proposals were selected for implementation in what became known as Phase 1 by Reclamation's Lower Colorado Basin Region and the Local Funding Agencies. The locations of the Phase 1 projects are geographically diverse with three projects located in Arizona, two projects located in California, and one project located in Nevada. Even on an intrastate basis, the projects are geographically diverse. For example, in Arizona, two projects were within the Central Arizona Project service area in the Phoenix metropolitan area and in southern Arizona near Tucson, and the third project is located adjacent to the Colorado River in western Arizona. In California, one project is located adjacent to the Colorado River and the second project is in southern California in the Coachella Valley. The projects are diverse on a sectoral basis as well. The project participants are agricultural, municipal, and tribal Colorado River water users.



**Figure 7. PSCP project locations, 2015 through 2019.**

The Phase 1 projects represent a variety of project types including golf course turf removal, conversion of farmland from flood or furrow irrigation to drip irrigation, recovery of effluent that previously was lost to evaporation, reduction in water diverted for off-stream underground storage, demand reduction through a combination of agricultural land fallowing, deficit irrigation, and increased use of local water supplies, and dedication of imported water to the Colorado River System in lieu of being diverted.

Table 12 on the following page presents a listing of Phase 1 projects implemented in the Lower Colorado River Basin that provides information regarding participant, location, water conservation method, estimated volume of water conservation, total project cost, and cost per acre-foot of system conservation.

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 12. Lower Colorado River Basin Projects – Phase 1**

Participant	State <sup>1</sup>	Water Conservation Method	Estimated System Conservation (AF)	Total Cost	Cost/AF
Southern Nevada Water Authority (SNWA)	NV	Project dedicated a portion of Muddy and Virgin River water historically used for agriculture to storage in Lake Mead in 2015 and 2016 in lieu of creating Tributary Conservation Intentionally Created Surplus credits.	15,000	\$2,250,000	\$150.00
City of Bullhead City (Bullhead City or BHC)	AZ	Project recovers effluent that was previously lost to evaporation through installation and operation of wells that inject the treated water into the Colorado River aquifer over a 2-year period, beginning in fall 2017.	4,400	\$520,000	\$118.00
Tohono O'odham Nation (TON)	AZ	Project conserved 10,080 AF of TON Central Arizona Project (CAP) water in Lake Mead in 2015 in lieu of storing the water underground in AZ.	10,080	\$2,550,240	\$253.00 <sup>2</sup>
Coachella Valley Water District (CVWD)	CA	Project offers rebates to farmers to convert up to 71 acres of farmland from flood/furrow irrigation to drip irrigation. Water conservation began in 2016 and will continue through 2019.	532	\$106,500	\$200.19 <sup>3</sup>
Central Arizona Water Conservation District (CAWCD)	AZ	Project conserved 25,265 AF in 2016 by CAWCD reducing delivery of CAP Excess Agricultural Pool water to 11 irrigation districts located within the CAP service area. The reduction in deliveries to the 11 irrigation districts was accomplished through a combination of fallowing, deficit irrigation, and increased use of local water supplies.	25,265	\$2,509,660	\$99.33
City of Needles (Needles)	CA	Project, as approved, had 2 components which together would conserve an estimated 2,870 AF of water over approximately a 10-year period. The 1 <sup>st</sup> component was completed by removal of 40 acres of turf from Needles' golf course to conserve an estimated 1,450 AF of water over approximately a 10-year period. The 2 <sup>nd</sup> component proposed to rehabilitate the golf course irrigation pumping system. Since this component was not installed, project will continue until 2,870 AF of system conservation water is created.	2,870	\$505,000	\$176.00
<b>Total</b>			58,147	\$8,441,400 <sup>4</sup>	\$145.17 <sup>5</sup>

1. NV=Nevada, AZ=Arizona, and CA=California.
2. The \$253 per acre-foot cost consists of a payment of \$171 per AF to the TON and an \$82 per AF payment to CAWCD to cover the fixed operation, maintenance, and replacement cost associated with the non-delivery of the CAP water.
3. The amount is based on payment to CVWD of \$1,500/acre, not to exceed \$1,000,500. Farmer interest in the CVWD project was less than expected; efforts to recruit farmers into the project ended in mid-2017 (see pages 45 to 48).
4. Total cost covered by initial Lower Basin contributions of \$8.25 million by the funding partners plus an additional contribution of \$1 million by CAWCD and \$85,400 by Reclamation minus \$894,000 reimbursed by Reclamation to Local Funding Agencies.
5. Average cost. Excluding the \$82 per AF paid to CAWCD for fixed operation, maintenance, and replacement costs, associated with the water not delivered through the CAP, the average amount paid to project participants is approximately \$131/AF.

The Phase 1 projects will collectively conserve approximately 58,147 acre-feet of Colorado River water in Lake Mead from 2015 through 2035 (by 2025, almost 98 percent or 56,728 acre-feet will be stored in Lake Mead). By the end of calendar year 2018, approximately 88 percent of the Phase 1 Pilot Program project system conservation water, or more than 51,000 acre-feet, was conserved in Lake Mead.

Phase 1 project cost was \$8,441,400.00. Of the total cost for Phase 1 projects, approximately 37 percent or \$3,085,400.00 was funded by the United States, and 63 percent, or \$5,356,000.00 was funded collectively by the Local Funding Agencies. The average amount paid to the project participant was \$145.17/acre-foot.

Out of the six PSCP projects selected and implemented in Phase 1, three of the projects (SNWA, TON, CAWCD) were implemented without any issues and they created the amount of system conservation expected. Three of the Phase 1 PSCP projects (Bullhead City, CVWD, and Needles) experienced unforeseen circumstances which resulted in lower volumes of system conservation being created than expected in Phase 1. Those three PSCP projects are discussed below.

### ***Bullhead City***

In 2015, Bullhead City submitted to Reclamation a Pilot Program proposal to recover lost effluent water (approximately 2,200 acre-feet per year) that flowed into lined and unlined (but highly sealed) ponds and evaporated into the atmosphere. Bullhead City proposed to make the water available for the PSCP for a period in exchange for monetary compensation. The lost effluent water would be (and is now) recovered by constructing two injection wells located at Bullhead City's Waste Water Treatment Plant (WWTP) site, and constructing the associated pipes, pumps, and controls for injecting the recovered effluent into the Colorado River aquifer which will be returned to the Colorado River system as return flow. In September 2015, Bullhead City and Reclamation entered an SCIA to construct two injection wells and piping and pump improvements to convey effluent from the WWTP to the two wells. PSCP funding to be provided to Bullhead City for the project was \$520,000 or \$118 per acre-foot. Bullhead City would inject 4,400 acre-feet of effluent water into the Colorado River aquifer over a 2-year period.

In 2016, at the 60 percent design stage, Bullhead City informed Reclamation that the cost of the project increased and Bullhead City needed an additional \$518,200 to complete the project. The reason for the cost increase is that Bullhead City's original cost estimate was based on a plan which utilized existing facilities. Unfortunately, Bullhead City learned that the existing facilities lacked sufficient water conveyance capacity to meet the needs of the project. Thus, new facilities needed to be constructed. Given the necessity to increase project design, construction, and costs, Bullhead City offered to dedicate an additional 4,400 acre-feet of recovered effluent water as system conservation for the PSCP for a total volume of 8,800 acre-feet over a 4-year period at a total cost of \$1,038,200 or approximately \$118 per acre-foot of system conservation. Bullhead City's offer was evaluated and considered along with other proposals submitted to Reclamation by Entitlement Holders in the Lower Basin in Phase 2 of the PSCP. Reclamation and the Local Funding Agencies selected the expanded version of the Bullhead City project. Bullhead City and Reclamation executed an amended SCIA in September 2016.

Completion of project construction and initiation of project operation occurred in late September 2017. Project construction was performed by in-house staff and through three construction contracts. During the bidding process for the manifold and injection system in 2017, Bullhead City observed that costs increased significantly from its estimate in 2016. Costs for piping, pumping, and well drilling remained constant. The additional costs for the manifold and injection system amounted to \$323,099.12 for a total project cost of \$1,361,299.12. As mentioned above, Amendment No. 1 of the SCIA authorized a maximum project funding amount of \$1,038,200. Bullhead City, Reclamation, and the Local Funding Agencies discussed increasing the water conservation amount and extending the time frame for increased compensation to cover the additional project costs. Ultimately, Bullhead City decided to cover the additional project costs with its own resources; no additional amendments to the SCIA between Bullhead City and Reclamation were necessary. The project was dedicated at a ribbon cutting ceremony on September 19, 2017.

From October through December 2017, just over 40 acre-feet were injected into the Colorado River aquifer via the injection wells. The injection rate of treated effluent accomplished by the injection well system during the first 3 months of project operations was below expectations. Higher injection rates were achieved in 2018 as 542 acre-feet of treated effluent were injected into the Colorado River aquifer. Yet the 2018 injection rate was still below the historical annual 2,200 acre-feet of tertiary treated wastewater effluent outflow from Bullhead City's WWTP that was lost from the Colorado River System and for which the well system and appurtenant facilities were sized.

Bullhead City is working to improve the performance of the injection well system. While the factors limiting the injection rate of the wells are not yet completely known, a video inspection was performed in mid-November 2018 and a hydrogeology and groundwater science consultant has been retained by Bullhead City to conduct an in-depth well analysis and develop technical specifications to conduct a well rehabilitation. The specifications will include procedures for sand removal and technical and chemical cleaning of the well screen and surrounding filter pack material using best available technologies. The specifications will also include suggested procedures for post-rehabilitation testing of the wells.

Bullhead City has contacted other Arizona cities including Lake Havasu City, Surprise, and Fountain Hills regarding their experience with operation and rehabilitation of injection wells. Bullhead City is trying to develop various approaches for increasing current system capacity including the possibility of drilling an additional well. Despite the challenges described above, Bullhead City is committed to accomplish effluent injection into the Colorado River aquifer pursuant to the SCIA or utilize a combination of approaches funded by their own financial resources until 8,800 acre-feet of water has been returned to the Colorado River System.

### ***CVWD***

On June 5, 2015, CVWD submitted to Reclamation a proposal to establish a furrow/flood to drip conversion rebate program (Rebate Program) to convert up to 667 acres of farmland within CVWD from furrow/flood irrigation to drip irrigation. In CVWD, flood irrigation of dates consumes about 10 acre-feet per acre and conversion from furrow/flood irrigation to drip irrigation typically results in the conservation of 3 acre-feet per acre per year. Presuming that



667 acres of date orchard land were converted to drip irrigation; annual irrigation water use would decrease by an estimated 2,000 acre-feet. Of the 2,000 acre-feet per year of estimated water conservation, CVWD proposed to dedicate 1,000 acre-feet per year to create system conservation water beginning in calendar year 2016 and continuing through at least 2020. CVWD proposed to create 5,000 acre-feet of Pilot Program system conservation water over a 5-year period at a cost of \$1,000,500 (\$1,500/acre x 667 acres) or \$200.10 per acre-foot of system conservation water.

Concurrent with the launch of the Rebate Program in 2016, and throughout 2017, CVWD embarked on an outreach program to educate date growers about the Rebate Program opportunity and the goals of the program. CVWD outreach activities included posting information about the Rebate Program on its website, advertising the Rebate Program in its quarterly *Farm Water Watch* publication, writing letters to district farmers, and speaking about the Rebate Program at local recurring meetings and at other meetings hosted by University of California Cooperative Extension.

In 2016, CVWD received five applications to convert furrow/flood irrigation systems to drip irrigation pursuant to the Rebate Program. The applications submitted to CVWD proposed to convert 144 acres from flood/furrow irrigation to drip irrigation and would conserve an estimated 432 acre-feet of water per year. Of the five applications submitted to CVWD, only three conversions were completed. The first project converted 40 acres for an estimated annual water savings of 120 acre-feet per year and the second project converted 14 acres for an estimated annual water savings of 42 acre-feet per year. The third project converted 17 acres from flood or furrow irrigation to drip irrigation for an estimated water savings of 51 acre-feet annually. Post conversion inspections were completed by CVWD in July 2016, January 2017, and May 2018. The time frame and annual volume of system conservation created by the CVWD project, by calendar year, is 2016, 21 acre-feet; 2017, 152 acre-feet; 2018, 196 acre-feet, and 2019, 163 acre-feet for a total of 532 acre-feet. Two of the five applicants for the Rebate Program declined to proceed due to the realization that conversion costs would be higher than expected. The additional conversion costs are discussed below.

Through conversations with farmers, CVWD staff learned why the Rebate Program failed to generate the anticipated level of interest despite its effort to encourage participation in the Rebate Program in 2016 and 2017. The farmers identified that conversion from flood or furrow irrigation to a drip irrigation system incurs significant monetary and other costs that would not be covered by the amount of the rebate to the farmers under the Rebate Program. Such costs include:

- Procurement of a power or mechanical source to pump and pressurize water through the filtration system into the distribution network underlying the field surface, and through the drip emitters at the place of use. A power source for the pump is required; the local power utility may need to extend existing electric powerlines or construct new powerlines. Alternatively, a stationary internal combustion engine could be acquired to power the motors that drive the water pump.
- Construction, operation, and maintenance of a reservoir to provide a continuous supply of canal water to the field that is irrigated by a drip irrigation system. Water delivery to the

farm gate occurs at a specific time and it occurs at higher flow rates than are needed to supply water to the drip irrigation system. Drip irrigation systems require water continuously at low flow rates. Aside from the monetary cost related to the reservoir, a farmer would incur an opportunity cost to use a portion of an acre or more of arable farmland for a reservoir site for the long-term. The size of the reservoir depends upon the amount of acreage to be drip irrigated, crop needs, plant spacing, soil type(s), and other factors. Some farmers lack suitable land for a reservoir.

Through the Rebate Program, a farmer was paid a rebate of \$1,500 per acre which covered the cost of converting the irrigation system but not the upfront cost to construct the reservoir or the long-term operation and maintenance costs assuming a farmer is willing to allocate land for the reservoir.

Once the barrier to increased farmer interest and participation in the Rebate Program was identified (the necessity of constructing a reservoir), CVWD attempted to seek funding sources for the upfront reservoir construction costs. CVWD informed Reclamation of its efforts to work with the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture. NRCS administers financial assistance programs for on-farm irrigation improvement projects that include drip irrigation systems and associated reservoirs. CVWD inquired about opportunities to partner with NRCS to develop jointly funded project application and implementation procedures. CVWD found, however, that certain NRCS eligibility and information submittal requirements were undesirable to farmers, and that the NRCS programs have income limitations that would apply to farmers in CVWD. Given these factors, CVWD was unsuccessful in attracting more farmers to participate in the Rebate Program.

After reviewing information provided by CVWD describing the reasons for the low farmer participation in the Rebate Program, a joint decision was reached by CVWD, Reclamation, and the Local Funding Agencies to end the Rebate Program opportunity and to terminate the Pilot Program irrigation conversion project in CVWD.

As of June 2018, Reclamation compensated CVWD \$106,500 for conversion of 71 acres of farmland from furrow/flood irrigation to drip irrigation. Unused partner funding in the amount of \$894,000.00 was returned to the Local Funding Agencies. The Local Funding Agencies committed the reimbursed funds to other Pilot Program projects.

### ***Needles***

Needles proposed to implement a Pilot Program project with two components, golf course turf removal and rehabilitation of the golf course irrigation pumping system. Together both components were estimated to conserve 2,870 acre-feet of water over approximately a 10-year period for approximately 287 acre-feet per year of water conservation. Needles proposed to (i) remove 40 percent (approximately 40 acres of 104 irrigated acres) of the existing River's Edge Golf Course (REGC) turf and replace it with ground cover, and (ii) upgrade the REGC's current irrigation system with, among other things, a multi-pump booster pumping station with variable frequency drive units, and concrete structure modifications allowing an existing concrete-lined pond to be used as a clear well for the new pumping station. Needles proposed to implement the second component of the proposed project with its own financial resources to make the proposal

more competitive. The turf removal component was funded by the PSCP and has been completed. Based on the results of a consumptive use analysis of the REGC, Reclamation estimated that the amount of system conservation created annually due to the turf removal is 145 acre-feet. The second component, the golf course pumping system upgrade, will not be implemented because Needles has been unable to obtain the necessary funding. Needles will continue to create 145 acre-feet annually of system conservation water for the PSCP through 2035, when 2,870 acre-feet will have been conserved in Lake Mead.

Following discussion of Phase 2 and Phase 3 projects below, Table 16 on page 55 reflects the volume of system conservation water created and stored in Lake Mead by project and year from 2015 through 2035.

### **Phase 2 Projects**

In 2016, five project proposals were selected for implementation in what is referred to as Phase 2 of the Pilot Program. One of the Phase 2 projects, the system efficiency project in Bullhead City, Arizona, is a Phase 1 project that was resubmitted and selected in Phase 2 for an additional 2 years and 4,400 acre-feet of system conservation at \$118 per acre-foot. Four of the Phase 2 projects are in Arizona within the Central Arizona Project service area and adjacent to the Colorado River in western Arizona. One project is in southern Nevada. Three of the participants are tribal and two participants are municipal. The nature of the projects includes agricultural land fallowing, system efficiency (recovery of effluent previously lost to evaporation), reduction of water diverted for off-stream underground storage, and dedication of imported water to the Colorado River System in lieu of being diverted.

The Phase 2 projects will collectively conserve approximately 53,878 acre-feet of Colorado River water in Lake Mead from 2016 through 2023. By the end of calendar year 2018, approximately 91 percent or almost 49,000 acre-feet were conserved in Lake Mead. For Phases 1 and 2, by the end of calendar year 2018, more than 119,000 acre-feet were conserved in Lake Mead.

The cost of Phase 2 projects was \$9,253,349.57 or \$171.95 per acre-foot. Of the total cost for Phase 2, approximately 78 percent or \$7,241,429.64 was funded by the United States and 22 percent or \$2,011,919.93 was funded by the Local Funding Agencies. Second-year options were exercised for two of the Phase 2 projects and Reclamation fully funded the second-year options in both projects. Table 13 on page 53 reflects Phase 2 participants, state, water conservation method, estimated water conservation, total project cost, and cost per acre-foot.

### **Phase 3 Projects**

On October 11, 2017, and October 23, 2017, respectively, Reclamation informed Colorado River water users and the IBWC, on behalf of Colorado River water users in Mexico, of a third funding opportunity for the PSCP (Phase 3). From the project proposals submitted, six projects were selected and implemented in 2018 and 2019. Of the six projects selected, four of the selected projects are with tribes in Arizona. One selected project is with Bard Water District (Bard) in southern California to implement a split-season agricultural fallowing project for a 4-month period in 2018 and 2019. This project in Bard is the first split-season agricultural fallowing project in the Lower Basin. As shown in Table 14 on page 54, Phase 3 project cost was \$12,139,574.42 or \$191.72 per acre-foot. Non-federal funding for Phase 3 projects was

\$8,340,113.82 or approximately 69 percent of the total Phase 3 project cost. Reclamation contributed \$3,799,460.60 or 31 percent of the Phase 3 project cost. The estimated volume of Phase 3 project system conservation water created and stored in Lake Mead is 63,322 acre-feet. With the implementation of Phase 3 projects, the Pilot Program in the Lower Basin is expected to create 175,347 acre-feet of system conservation in Lake Mead by 2035 for a cost of approximately \$29.8 million or \$170.14 per acre-foot as summarized in Table 15 on page 54.

Table 16 on page 55 presents the volume of system conservation water created and stored in Lake Mead by project and year from 2015 through 2035, for Phases 1, 2, and 3. By the end of calendar year 2019, 165,618 acre-feet of system conservation water is expected to be created and stored in Lake Mead from projects implemented in Phases 1 through 3.

### **Findings Specific to the Lower Basin**

- Written agreement(s) was needed from surplus or unquantified water contractors or water users with a junior priority located within the same state as a PSCP project to forbear use of the system conservation water created by a PSCP project.
- Reclamation's Lower Colorado Basin Region acted as the contracting entity and performed water accounting and verification activities for the PSCP which was consistent with the Lower Colorado Basin Region's responsibilities in the Lower Basin as Water Master. The Lower Colorado Basin Region's existing role in administering Colorado River water entitlements and performing the accounting of water use in the Lower Basin increases support and credibility for the PSCP and the conservation actions achieved through PSCP projects.
- Tribal participation was encouraged by the Local Funding Agencies, NGOs, and Reclamation. Implementation of PSCP projects by tribes contributed significantly to the volume of system conservation water created in Lake Mead by the PSCP. Tribal involvement in future water conservation programs will be vital.
- System Conservation projects that require enrollment to determine the actual water conservation volume allow for reasonable estimate of the conservation volume yet some level of uncertainty will remain regarding final water conservation volume, timing of conserved water being created, and the level of compensation to the project participant. Future programs should consider options which would reduce such uncertainties.
- Future programs will need to consider how to encourage additional and new project participants, especially given other competing water conservation programs and potential impacts to other water users.

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 13. Lower Colorado River Basin Projects – Phase 2**

Participant	State	Water Conservation Method	Estimated System Conservation (AF)	Total Cost	Cost/AF
SNWA	NV	Project dedicates a portion of Virgin River water from post-1929 water rights leased by SNWA from Bunkerville Irrigation Company to storage in Lake Mead for a 3-year period beginning October 1, 2016 through September 30, 2019.	2,437	\$188,591.57	\$77.39 <sup>1</sup>
Bullhead City	AZ	Project recovers effluent that was previously lost to evaporation through installation and operation of wells that inject the treated water into the Colorado River aquifer. The duration of the original 2-year project was extended for 2 more years to conserve an additional 4,400 AF of water.	4,400	\$518,200	\$118
TON	AZ	Project conserved 9,817 AF of TON CAP water in Lake Mead in 2016 in lieu of storing the water underground in AZ.	9,817	\$1,725,338	\$175.75
		Second-year option will conserve 10,080 AF of TON CAP water in Lake Mead in 2017 in lieu of storing the water underground in AZ.	10,080	\$1,814,400	\$180
Colorado River Indian Tribes (CRIT) Kudu Farms	AZ	Project fallowed 1,591 acres of farmland and conserved 8,572 AF during the fallowing period beginning October 1, 2016 through September 30, 2017.	8,572	\$1,618,545	\$188.82 <sup>2</sup>
		Second-year option will fallow 1,591 acres of farmland and conserve 8,572 AF during the fallowing period beginning October 1, 2017 through September 30, 2018.	8,572	\$1,630,775	\$190.24
Gila River Indian Community (GRIC)	AZ	Project conserved 10,000 AF of GRIC CAP water in Lake Mead in 2016 in lieu of storing the water underground in AZ.	10,000	\$1,757,500	\$175.75
<b>Total</b>			<b>53,878</b>	<b>\$9,253,349.57</b>	<b>\$171.95</b>

1. The cost per AF is \$75 in 2017, \$77.27 in 2018, and \$79.57 in 2019. Average cost based on expected system conservation creation. Cost is provisional.
2. This amount is based on payment to CRIT of \$1,000/acre of fallowed land equal to \$1,591,000. In addition to being compensated for water conservation, project administrative costs of \$27,545 incurred by CRIT were paid from Pilot Program funding. Total project costs including the administrative costs are \$1,618,545.

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 14. Lower Colorado River Basin Projects – Phase 3**

Participant	State	Water Conservation Method	Estimated System Conservation (AF)	Total Cost	Cost/AF
Bard Water District	CA	Project fallowed 972.86 acres of farmland from April 15, 2018 through August 15, 2018.	1,747	\$411,953.24	\$235.81 <sup>1</sup>
		Project fallowed 1,983.94 acres of farmland from April 15, 2019 through August 15, 2019.	3,571	\$866,981.78	\$242.78
CRIT MTA Farms	AZ	Project is fallowing 1,884.4 acres of farmland from October 1, 2018 through September 30, 2019.	10,741	\$2,025,730.00	\$188.60
TON 3	AZ	Project conserved TON CAP water in Lake Mead in 2018 in lieu of storing the water underground in AZ.	11,050	\$2,044,250.00	\$185.00
CAWCD 2	AZ	Project conserved CAP Excess Agricultural Pool water in Lake Mead in 2018 by reducing delivery of such water to one irrigation district which implemented one or more of deficit irrigation, fallowing, and/or use of local water supplies.	5,042	\$693,275.00	\$137.50
Fort McDowell Yavapai Nation (FMYN)	AZ	Project conserved FMYN CAP water in Lake Mead in 2019.	13,683	\$2,599,770.00	\$190.00
CRIT Quail Mesa	AZ	Project fallowed 3,705.1 acres of farmland from January 1, 2019 through December 31, 2019.	17,488	\$3,497,614.40	\$200.00
<b>Total</b>			63,322	\$12,139,574.42	\$191.71

1. Bard was compensated \$424/acre by Reclamation and the non-Federal funding partners in 2018. From that compensation amount, \$100/acre was retained by Bard for administrative costs and \$324/acre was paid to farmers participating in the PSCP project in 2018. Total project costs were expected to be \$412,492.64 (\$424/acre X 972.86 acres); \$97,286.00 was retained by Bard for administrative costs; \$315,296.64 was expected compensation to farmers minus \$539.40 for irrigation on enrolled land during fallowing period. Compensation paid to farmers for system conservation created was \$314,667.24 or \$180.12/AF. In 2019, Bard was compensated \$437/acre and Bard retained \$100/acre for administrative costs. Farmers were compensated \$668,587.78 (at \$337/acre) or \$187.23/AF.

**Table 15: Summary of All Phases**

Time Frame	Phases	Number of Projects	System Conservation (AF)	Total Cost (\$)	Average Cost (\$/AF)	Federal/Non-federal Cost-Share
2015 through 2019	3	16	175,347	\$29,834,323.99	\$170.14	47%/53%

Pilot Projects to Increase Colorado River System Water in Lake Powell and Lake Mead

**Table 16: PSCP Projects Implemented During Phases 1, 2, and 3 – Volume of System Conservation Water in Acre-Feet by Project and Year**

Projects	State	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
<b>Phase 1</b>																							
BHC 1	AZ	-	-	40	480	840	2,200	840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,400
CAWCD 1	AZ	-	25,265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,265
CVWD	CA	-	21	152	196	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	532
Needles	CA	-	145	146	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	114	2,870
SNWA 1	NV	7,500	7,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,000
TON 1	AZ	10,080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,080
<b>Subtotal Phase 1</b>		17,580	32,931	338	821	1,148	2,345	985	145	145	145	145	145	145	145	145	145	145	145	145	145	114	58,147
<b>Phase 2</b>																							
BHC 2	AZ	-	-	-	-	-	-	1,360	2,200	840	-	-	-	-	-	-	-	-	-	-	-	-	4,400
CRIT Kudu Farms	AZ	-	1,137	8,572	7,435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,144
GRIC	AZ	-	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,000
SNWA 2	NV	-	188	744	860	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,437
TON 2	AZ	-	9,817	10,080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,897
<b>Subtotal Phase 2</b>		-	21,142	19,396	8,295	645	-	1,360	2,200	840	-	-	-	-	-	-	-	-	-	-	-	-	53,878
<b>Phase 3</b>																							
Bard Water District	CA	-	-	-	1,747	3,571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,318
CRIT MTA Farms	AZ	-	-	-	1,424	9,317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,741
TON 3	AZ	-	-	-	11,050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,050
CAWCD 2	AZ	-	-	-	5,042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,042
FMYN	AZ	-	-	-	-	13,683	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,683
CRIT Quail Mesa	AZ	-	-	-	-	17,488	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17,488
<b>Subtotal Phase 3</b>		-	-	-	19,263	44,059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63,322
<b>Total</b>		17,580	54,073	19,734	28,379	45,852	2,345	2,345	2,345	985	145	145	145	145	145	145	145	145	145	145	145	114	175,347

## IV. Pilot Program Accomplishments

### SCPP

In the Upper Basin, water users understood at the outset of the Pilot Program that the institutional framework in the Upper Basin would not recognize that system conservation water is not part of the natural flow of a river available for consumptive use. Therefore, in the absence of legal mechanisms to protect the system conservation water from diversion, it is available for diversion and beneficial use by an Upper Basin Colorado River water user before the system conservation water flows into Lake Powell. Additionally, the predominance of smaller water users across many different sub-basins compared to the Lower Basin required the Upper Basin interests to enter into many more agreements with water users to effect reduction of consumptive use of Colorado River System water in significant quantities. Thus, the focus on accomplishments in the Upper Basin has been identifying and understanding those issues in addition to contributing water to Lake Powell. As the concept of reducing consumptive use of Colorado River water to assist with increasing the elevations of Lake Powell is part of the Upper Division States' demand management element of their drought contingency plan, the SCPP is an opportunity to test the viability of long-term demand management and identify issues that need to be addressed for a system conservation program to proceed. Accomplishments related to identifying and understanding these issues are presented in the Findings and Recommendations section on page 58.

During the first three years of the SCPP ending in October 2017, interest in the Pilot Program from Upper Basin water users grew with project proposals or applications increasing by 100 percent in the second year and 300 percent in the third year compared to the first year. During 2018, the fourth and final year of the program, the number of applications dropped off largely because many participating landowners consolidated their applications under single agents to experiment with opportunities to improve administrative efficiencies. Over the four years of the program, 64 projects were implemented in the Upper Basin. While the number of projects selected in 2017 was less than in 2016, the scale of the 2017 projects was larger compared to 2016 projects and greater volumes of system conservation water was created. In 2018 the number of projects increased over 2017 and was on par with the number awarded in 2016. Over the 4-year SCPP, post project analysis estimated that approximately 51,000 acre-feet of system conservation water was created rather than approximately 47,000 acre-feet which was based on initial estimates reflected in project applications. The average cost per acre-foot of system conservation water for agricultural projects dropped from \$275 per acre-foot in 2015, to \$157 per acre-foot in 2018. Several factors may have contributed to the decrease in the average cost per acre-foot of system conservation water created by agricultural projects including increased competition for limited SCPP funding due to greater acceptance of and certainty in the SCPP. Two municipal projects participated in the SCPP in 2015 and 2016. The cost of the system conservation water created by the two projects was \$670 per acre-foot for the 2015 project and \$190 per acre-foot for the 2016 project. Although municipal participation in the SCPP was



relatively low, the compensation rate for system conservation water in a municipal project can be close to the overall SCPP average cost per acre-foot of approximately \$180. The increased interest by Upper Basin water users in the Pilot Program indicates a potential for a long-term demand management program at lower rates of compensation than has been negotiated to date.

## **PSCP**

Water conservation by PSCP projects implemented through 2019 added approximately 2 feet of elevation to Lake Mead. Through the PSCP and other Lower Basin water conservation efforts implemented in 2016 through 2019, shortage conditions were averted in the Lower Basin through calendar year 2020.

As of calendar year 2019, in the Lower Basin, 16 projects have been implemented which are expected to conserve 175,347 acre-feet of water in Lake Mead by 2035, at an average cost of approximately \$170 per acre-foot. The PSCP projects came to fruition by notifying Entitlement Holders about the opportunity to create system conservation water for the Colorado River System through voluntary compensated participation.

In the Lower Basin, the requirement that a PSCP participant must submit to Reclamation a downward adjusted Colorado River water order for the calendar year in which the PSCP project will be operating is one critical mechanism for ensuring that the system conservation remains in Lake Mead. The other critical and complementary mechanism is for the surplus contractor or junior priority user(s) in a state where a PSCP project is operating to agree not to order the conserved water for delivery.

System conservation programs that are temporary, voluntary, and compensated may be a tool for water users to manage operational costs, variations in income streams, and investment to sustain a strong economy.

## V. Findings and Recommendations

### General Findings

- The Pilot Program successfully demonstrated that voluntary, compensated water conservation projects can conserve water for Colorado River System storage to help mitigate the impacts of drought.
- The Pilot Program attracted participation by Colorado River System water users across multiple sectors including agriculture, municipal and industrial, and tribal. Interest in Pilot Program participation among Upper and Lower Basin water users indicates potential for a long-term program to reduce consumptive use or losses at reasonable rates of compensation. Support for the Pilot Program grew in the Upper and Lower Basins in part due to the accessibility of information about the Pilot Program provided through outreach and dedicated webpages developed by Reclamation and UCRC.
- The goals of protecting critical reservoir elevations in Lake Powell and maintaining a high level of Pilot Program efficiency may require a greater diversity in participation regarding type of water use and geographic location of Pilot Program projects, among other components, in order to positively impact Lake Powell elevation.
- In the Upper Basin, consent from the Local Funding Agencies and the Governor's Representative of the state in which the proposed project was to be located was successfully obtained for all projects.
- In the Upper Basin, the Pilot Program was considered an important experience to inform issues that may need to be addressed to assess the viability of the demand management element of the proposed Upper Basin drought contingency plan including: administrative structure; program funding; program scale; protection of water rights; legal mechanisms for shepherding conserved water; availability of water use data; consumptive use monitoring and calculations; water accounting mechanisms; and addressing potential secondary impacts of a system conservation program.
- Any future system conservation program in the Upper and Lower Basins must be implemented and administered separately due to significant differences in the legal framework governing water rights and hydrology of the two basins. System conservation programs in the two basins may have common goals, objectives, funding mechanisms, project selection requirements and performance criteria; however, a system conservation program must incorporate sufficient flexibility to enable the two basins to implement and administer the projects separately in accordance with each basin's legal framework, river operations, and hydrology.
- In the Upper Basin, an entity that can administer a long-term demand management program may be beneficial.

- Feedback from public and interested parties should be solicited to ascertain the value of a system conservation program, if any, to the population of the Colorado River Basin. The Upper Division States, through the UCRC, suspended the SCPP in 2018 because the goals of the program were largely achieved and the UCRC chose to focus its resources to consider the viability of a long-term demand management program and to address the issues associated with a demand management program. Reclamation supports the Upper Division States in this effort.
- In the Upper Basin, should a long-term system conservation program or demand management program be developed, discussion should be encouraged regarding the structure, administration, and funding of an entity to conduct such a program.
- For a long-term sustainable system conservation or demand management program to be successful, Upper Division States must identify and establish legal mechanisms that protect system conservation water from appropriation by other water users to ensure that the system conservation water can flow to Lake Powell. Improved water accounting systems and related procedures must be developed to measure and quantify actual system conservation on a consumptive use basis. The adoption of standard and uniform consumptive use measurement techniques should be encouraged. Assistance from the State Engineers of the Upper Division States will be necessary for development of water accounting systems that will allow system conservation water to be quantified and shepherded past diversion points that are located between the SCPP projects and Lake Powell. Identification and establishment of appropriate mechanisms to address these issues in the Upper Division States may require time for each state to assess its individual perspective as well as engage with the other Upper Division States.
- Future projects should be evaluated in terms of average cost and the time required to conserve the amount of water proposed among other criteria, such as diversity in geographic location, diversity in water use sector, and opportunities for learning. Financial and labor-related commitments for performance of administrative duties should also be included so that minimum yield/cost thresholds can be established.
- System conservation is one tool that in concert with other actions may help mitigate the impacts of long-term drought in the Colorado River Basin. The cost of voluntary system conservation and its benefits need to be evaluated relative to the cost of other alternatives and their benefits to water users and the Colorado River System.
- The Pilot Program was perceived to be sufficiently successful to attract additional participation and funding from NGOs and other entities, such as the WFF, EDF, TNC, and TU, besides the original Local Funding Agencies.

- Opportunities should be assessed for using other authorized programs to yield system conservation benefits.
- Provision of funding for the capital and operational costs of consumptive use modeling, water measurement devices, and data collection for any participating water use system in a system conservation program may be necessary to quantify system conservation volumes created in such programs.

## Administrative Findings

- Applications for conservation projects like the Upper Basin irrigation projects require detailed information regarding water rights, historic water use, acreage, and irrigation schedules which require significant effort and resources on the part of the participant. For this Pilot Program, support from organizations such as TU and TNC helped to make this program successful by assisting proponents with gathering and providing data. For future success, consideration should be given to the development of these types of data, improvements to historic water use calculations and measurement, availability of assistance and support, and potential alternative application processes.
- Regarding proposal submission, Reclamation's Lower Colorado Basin Region found that many Entitlement Holders needed more time to develop and submit the proposals given the nature of the projects being proposed and the nature of governance in the Entitlement Holder's organization. For example, if a proposed project was to involve agricultural land fallowing, after determining how the fallowing program would be implemented and administered within the agricultural water district, district managers needed to communicate with farmers to ascertain their level of interest and if they were willing to work within the proposed program structure developed by the district. If enough farmers were willing participants, the district manager often needed to obtain approval from the district's Board of Directors prior to submitting the proposal to Reclamation's Lower Colorado Basin Region. Many water district Boards only meet one time per month. Often a 30-day period was insufficient for an Entitlement Holder to accomplish all the tasks necessary for preparation of the project proposal and securing Board of Directors approval prior to submission of the project proposal.
- Standard form agreements work well in Reclamation's Lower Colorado Basin Region since the Secretary is the water master of the lower Colorado River. In the Upper Basin, however, streamlining and simplifying the contracting process is more challenging. Under the Pilot Program, the UCRC was concerned about its potential exposure for liability with the Local Funding Agencies and the project participants. Furthermore, system conservation agreements must be consistent with the laws of multiple states. In response to these issues, each SCIA and related agreements were customized for each project and participant and required months to complete. Upper Division States developed a standard form contract to simplify contract development, review, and approval. A standard form contract could be included in RFPs so participants can

determine whether they could agree to the contract provisions before developing an application or project proposal.

- Reclamation's Lower Colorado Basin Region relied on its existing Lower Colorado River Operations Program (LCROP) funding to cover PSCP administrative costs. Creation of a line item in LCROP for the administrative costs incurred to manage a system conservation program is recommended. Annual administrative costs were \$186,325 in FY 2015; \$180,500 in FY 2016; \$41,438 in FY 2017; and \$112,661.30 in FY 2018. Administrative activities include project proposal requests, review, and evaluation; consultation with Local Funding Agencies, a Third-Party Contributor in 2018 and 2019, and project participants; development and drafting of PSCP agreements; completion of required environmental compliance; monitoring of project performance metrics and system conservation creation; completion of field verification where appropriate; water accounting for system conservation created; creation of financial accounts in the Financial and Business Management System (electronic accounting system); managing invoicing and receivables; payment processing and transmission; and financial account closure upon project completion. Administrative costs were higher during the first 2 years of the PSCP because new contract forms had to be developed and the Lower Colorado Basin Region implemented many new projects in that time frame. In FY 2017, the Lower Colorado Basin Region administered existing projects. New project proposals were requested in FY 2018 requiring project proposal review and selection, negotiation and development of new agreements, and project implementation.

In the Upper Basin, Reclamation's Upper Colorado Basin Region relied upon its existing Upper Colorado River Operations Program (UCROP) fund as well as additional appropriations for drought to cover its administrative costs and grants to UCRC for direct project funding and administrative assistance. Should a long-term system conservation project be authorized in the Upper Basin, creation of a line item in UCROP to cover administrative costs and potential financial contributions to system conservation projects in the Upper Basin is recommended.

- For the contracting entities, UCRC and Reclamation's Lower Colorado Basin Region, managing billing and payment to project participants was labor intensive and required adequate staffing and establishment and management of financial records. Reclamation's Lower Colorado Basin Region relied upon its finance staff; UCRC lacked the staffing and other resources to fulfill such responsibilities. The Upper Basin States and Reclamation's Upper Colorado Basin Region provided UCRC administrative support. Should a long-term system conservation program be authorized, the administrative needs and costs must be recognized and provided for in both the Upper and Lower Basins. If Reclamation's Lower Colorado Basin Region becomes a long-term contracting entity, streamlining or changing these duties may not be feasible since invoicing, collections, and payments must be performed consistent with the Financial and Business Management System. In the Upper Basin, the Upper Basin interests may have more flexibility to devise streamlined approaches.

- Water users who are eligible to participate in system conservation projects may be sensitive to the source of funding for system conservation programs. In the Upper Basin, funding from Lower Basin municipal water agencies encouraged some Upper Basin water users to participate in SCPP projects because the basin-wide cooperation was a positive aspect of the Pilot Program. Conversely, some Upper Basin water users who were interested in testing a water conservation method were unwilling to participate due to Lower Basin financing in Upper Basin system conservation projects.
- In partnership with the Upper Division States, NGOs provided key assistance in the success of the SCPP in the Upper Basin. TNC and TU specifically provided assistance including on-the-ground identification of possible projects, outreach to potential participants and assistance to applicants in conducting technical support for and completing applications for the program. WFF, the Windward Fund, and the Gates Family Foundation provided significant funding, through a Local Funding Agency, which also contributed to the success of the program by allowing additional projects to be awarded. This partnership could be key in the success of a potential future demand management program in the Upper Basin.
- Transaction costs incurred by Reclamation and the Local Funding Agencies were relatively constant across projects, indicating that large-scale system conservation projects represent a more efficient use of resources associated with administrative aspects of the Pilot Program including:
  - Development, negotiation, and execution of agreements
  - Drafting and approval of Pilot Program-related correspondence
  - Invoicing of Local Funding Agencies and payments to project participants
  - Information management
  - Monitoring of project status
  - Field verification
  - Water accounting
  - Communications with project participants and partners
  - Periodic reports to partners by Reclamation's Lower Colorado Basin Region and UCRC
  - Communications, both verbal and written, disseminated to Reclamation's Commissioner and Department of the Interior staff, members of Congress, media, and the public, as required
- In 2015 and 2016, Reclamation's Lower Colorado Basin Region and the Local Funding Agencies tried to partner with the NRCS to leverage funding for on-farm system efficiency improvements in a PSCP project area. In 2015, SNWA and Reclamation's Lower Colorado Basin Region submitted a project proposal to NRCS pursuant to the Regional Conservation Partnership Program (RCPP).<sup>18</sup> The project proposal was not

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<sup>18</sup> RCPP, authorized by the Agricultural Act of 2014, dated February 7, 2014 (128 Stat. 649) promotes coordination between NRCS and its partners to deliver conservation assistance to agricultural producers and landowners to encourage restoration and sustainable use of soil, water, wildlife, and related natural resources on a regional or watershed scale.

selected for implementation by the NRCS. In 2016, the NRCS and Reclamation met to discuss ways to increase coordination and communication. Efforts were made to combine EQIP funding for on-farm system efficiency and an ongoing PSCP project in CVWD. As discussed in Section III, CVWD farmers did not desire to participate in the EQIP program due to the program's information requirements. Denver Water, Upper Division States, and Reclamation's Upper Colorado Basin Region also met with NRCS to explore the potential for SCPP collaboration with the EQIP program. Everyone determined that due to widely varying information requirements, the preferred approach would be to refer potential applicants to the appropriate separate programs. The examples demonstrate that coordination between Reclamation and NRCS improved; however, in order to focus NRCS and Reclamation funding on mutual objectives, both agencies must identify hurdles which dissuade farmers from participating in NRCS and Reclamation programs concurrently.

- During periods when Pilot Program project proposals were being reviewed, evaluated, and considered for selection, Reclamation received Freedom of Information Act (FOIA) requests for copies of the proposals while the deliberative process of selection was transpiring, including negotiations with potential project participants regarding monetary compensation for creation of system conservation water and other terms and conditions relating to the proposed projects. System conservation projects are selected on a competitive basis; if project proposal details are shared with the public or competing applicants during the deliberation process, Reclamation's Lower Colorado Basin Region and UCRC and Upper Basin parties will be unable to effectively negotiate key terms and conditions including monetary compensation. In the Lower Basin, Reclamation obtained agreement from the FOIA requestors to retract their information request until SCIA's were executed. PSCP and SCPP project information including location and identity of project participant, system conservation method, project time frame, volume of system conservation water to be created, project cost, and cost per acre-foot are posted on-line once the relevant Pilot Program agreements containing the information are fully executed.

## **Key Findings of this Report to Congress**

Any system conservation programs in the Upper and Lower Basins must be implemented and administered independently due to significant differences in the legal framework governing water use and rights and the hydrology of the two basins. System conservation programs in the two basins may have common goals, objectives, funding mechanisms, project selection requirements and performance criteria, but a system conservation program must incorporate sufficient flexibility to enable states and agencies in the two basins to implement and administer the projects independently in accordance with each basin's legal framework, river operations, and hydrology. For a system conservation program to significantly increase water surface elevations at Lake Powell and Lake Mead, significant investment would be necessary.

## **Recommendation**

The Department of the Interior supports system conservation program activities in the Colorado River Basin and recommends that such activities should be continued. The widespread interest in system conservation activities and shared Pilot Program experience gained by Reclamation, state agencies, Local Funding Agencies, NGOs, Colorado River water users, and tribes will serve as a platform for future collaboration on system conservation activities to help mitigate drought in the Colorado River Basin.



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Agreement No. 14-XX-30-W0574

AGREEMENT AMONG  
THE UNITED STATES OF AMERICA, THROUGH THE  
DEPARTMENT OF THE INTERIOR,  
BUREAU OF RECLAMATION,  
THE CENTRAL ARIZONA WATER CONSERVATION DISTRICT,  
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,  
DENVER WATER, AND  
THE SOUTHERN NEVADA WATER AUTHORITY,  
FOR A PILOT PROGRAM FOR FUNDING THE CREATION OF COLORADO RIVER  
SYSTEM WATER THROUGH VOLUNTARY WATER CONSERVATION AND  
REDUCTIONS IN USE

1. PREAMBLE: THIS AGREEMENT (“Agreement”) is entered into this 30<sup>th</sup> day of July, 2014 (“Effective Date”), by and between the UNITED STATES OF AMERICA (“United States”), represented by the Secretary of the Interior (“Secretary”) acting through the officials executing this Agreement, the CENTRAL ARIZONA WATER CONSERVATION DISTRICT, a multi-county water conservation district duly organized and existing under the laws of the State of Arizona (“CAWCD”), the METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a regional public water district duly organized under California law (“MWD”), DENVER WATER, a municipal corporation and political subdivision of the State of Colorado (“DW”), and the SOUTHERN NEVADA WATER AUTHORITY, a political subdivision of the State of Nevada (“SNWA”), each being referred to individually as “Party” and collectively as the “Parties”, and pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), designated the Reclamation Act, and acts amendatory thereof or supplementary thereto, the Act of March 4, 1921 referred to as the Contributed Funds Act (41 Stat. 1404, 43 U.S.C. § 395), the Act of January 12, 1927 (44 Stat. 957, 43 U.S.C. § 397a), the Act of December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, the Act of April 11, 1956 (70 Stat. 105), designated the Colorado River Storage Project Act; the Act of September 30, 1968 (82 Stat. 885), designated the Colorado River Basin Project Act, the Act of

June 24, 1974 (88 Stat. 266), designated the Colorado River Basin Salinity Control Act, as amended, and the Act of March 30, 2009 (123 Stat. 991), known as the Omnibus Public Land Management Act, all of which acts are part of the body of law commonly known and referred to as Federal Reclamation law.

2. RECITALS:

2.1 WHEREAS, for the purposes of controlling floods, improving navigation, regulating the flow of the Colorado River, and providing for storage and delivery of stored water for the reclamation of public lands and other beneficial uses exclusively within the United States, the Secretary, acting under and pursuant to the provisions of the Colorado River Compact and the Boulder Canyon Project Act, has constructed and is now operating and maintaining in the mainstream of the Colorado River at Black Canyon that certain structure known and designated as Hoover Dam and incidental facilities, creating thereby a reservoir designated as Lake Mead;

2.2 WHEREAS, the Boulder Canyon Project Act provides, among other things, that the Secretary is authorized, under such general regulations as he or she may prescribe, to contract for the storage of water in Lake Mead and for the delivery of such water at such points as may be agreed upon for irrigation and domestic uses;

2.3 WHEREAS, the Boulder Canyon Project Act provides further that no person shall have or be entitled to have the use, for any purpose, of the stored water in Lake Mead, except by contract with the Secretary;

2.4 WHEREAS, the Colorado River Storage Project Act and the Colorado River Basin Project Act authorized, among other things, the Secretary to construct and operate Glen Canyon Dam and Lake Powell, which allows the Upper Division States to utilize their share of the Colorado River and meet their obligations to the Lower Division States under the Colorado River Compact;

2.5 WHEREAS, the Colorado River Basin Salinity Control Act of 1974 authorized the Secretary to implement various projects to reduce salinity in the Colorado River Basin and directed the Secretary to undertake research on additional methods for accomplishing that objective;

2.6 WHEREAS, the United States Bureau of Reclamation, hereinafter referred to as “Reclamation,” adopted a Policy Establishing a Demonstration Program for System Conservation of Colorado River Water (“Demonstration Policy”) on May 26, 2006, and extended the Policy in 2009. The Demonstration Policy expired on December 31, 2010;

2.7 WHEREAS, recognizing the effects of ongoing drought in the Colorado River Basin, the purpose of the Demonstration Policy was to establish a demonstration or “pilot” program of voluntary agreements with eligible holders of Colorado River water entitlements to conserve a portion of their approved annual consumptive use of Colorado River water for the benefit of Colorado River system storage;

2.8 WHEREAS, one of the purposes of the Pilot Program defined below and established herein shall be to further investigations and system benefits initiated under the Demonstration Policy;

2.9 WHEREAS, MWD and Reclamation entered into an agreement pursuant to the Demonstration Policy on August 15, 2006, whereby owners of land within the Palo Verde Irrigation District (“PVID”) voluntarily fallowed land within the PVID service area that was eligible to receive Colorado River water pursuant to an agreement between PVID and MWD;

2.10 WHEREAS, pursuant to the August 15, 2006, agreement between Reclamation and MWD, Reclamation paid MWD to undertake fallowing on a voluntary basis within PVID, with the goal of conserving 10,000 acre-feet of Colorado River water for the benefit of the overall Colorado River system;

2.11 WHEREAS, the Yuma Mesa Irrigation and Drainage District (“YMIDD”) and Reclamation entered into agreements pursuant to the Demonstration Policy on February 4, 2008,

October 7, 2008, and December 28, 2009, whereby Reclamation paid YMIDD to undertake fallowing on a voluntary basis within YMIDD to conserve Colorado River water for the benefit of the overall Colorado River System;

2.12 WHEREAS, the Colorado River System has been suffering from the effects of a drought that began 14 years ago, leading to substantially decreased water elevation levels in both Lakes Mead and Powell;

2.13 WHEREAS, recent Colorado River System modeling projections show a serious near-term risk that water elevations in both Lakes Mead and Powell could decline to levels that would trigger shortages and could interrupt the ability of certain municipal users to draw or benefit from water from both lakes and certain hydropower users to benefit from hydroelectric energy generation;

2.14 WHEREAS, in December 2012, Reclamation and the seven Colorado River Basin States completed the Colorado River Basin Water Supply and Demand Study (“Basin Study”), with the purpose of defining future imbalances in water supply and demand through the year 2060, and to develop and analyze options and strategies to resolve those imbalances;

2.15 WHEREAS, results from the Basin Study show that without further proactive steps, there may be a long-term and potentially significant imbalance in future water supply and demand. Options to address these imbalances include increased agricultural and municipal water conservation;

2.16 WHEREAS, municipal water agencies in the Colorado River Basin provide a secure water supply to over 30 million residents in the United States, meeting basic human needs and sustaining vital economic functions in the region, United States and the world. Based on their many shared interests, municipal water agencies in the Colorado River Basin have been working together for nearly 20 years on initiatives to develop water supplies, manage demand through conservation, and operate Colorado River System reservoirs for the benefit of multiple interests;

2.17 WHEREAS, all CAWCD municipal customers supplied by the Central Arizona Project, including Phoenix and Tucson, have been successful in reducing per capita consumption by making significant investments in conservation, reuse, and infrastructure. The City of Phoenix has reduced water use by 35 percent since 1980, while approximately 97 percent of the City of Scottsdale's reclaimed water is reused for turf irrigation or recharge efforts. CAWCD municipal customers remain committed to expand these investments;

2.18 WHEREAS, in MWD's service area, southern California urban agencies have funded agricultural and urban conservation measures which have allowed the State of California to reduce its use of Colorado River water by 20 percent over the last decade. In addition, through investments in water conservation and local supply management, including recycling, urban southern California imports less water today than it did 20 years ago, despite the region having added more than 4 million people. MWD remains committed to expand these efforts;

2.19 WHEREAS, DW has reduced its overall water use by over 20 percent since 2002 while serving an ever-increasing population, in part through its nationally recognized Use Only What You Need campaign. DW has expended over \$100 million in its various conservation programs to save a cumulative total of over 1 million acre-feet of water, much of which has benefited the Colorado River Basin. DW has constructed a recycled water treatment plant, and is steadily increasing service to parks, golf courses, and industrial users in its service area using recycled water. DW remains committed to expand these efforts;

2.20 WHEREAS, SNWA's annual water consumption decreased by nearly 32 billion gallons between 2002 and 2013, despite a population increase of 480,000 people during that time. This equates to a reduction of approximately 30 percent in southern Nevada's gallons per capita per day demand. Southern Nevada currently reclaims nearly all of its wastewater, either through Colorado River return flow credits or direct reuse. SNWA remains committed to expand these efforts;

2.21 WHEREAS, the Parties propose to establish a Pilot Program (defined below) whereby users of Colorado River water would be compensated for voluntary reductions in water use, including the fallowing of agricultural lands or increased water efficiency, and whereby other system losses or demands would be eliminated in order to create conserved water for storage in Lakes Powell and Mead so as to manage water elevation levels in Lakes Mead and Powell above critically low elevations, to benefit the overall Colorado River System, and to reduce salinity;

2.22 WHEREAS, the Parties desire to cooperate with the users of water for agricultural purposes, avoid adverse economic and environmental impacts, and compensate voluntary reductions of consumptive use of water by fallowing agricultural lands only to the extent such reductions in consumptive use avoids injury to existing water rights;

2.23 WHEREAS, CAWCD, MWD, DW, and SNWA are willing and able pursuant to the terms of this Agreement to make monetary capital contributions to implement the Pilot Program in recognition of financial commitments from the United States for the Pilot Program;

2.24 WHEREAS, Reclamation has committed to further the objectives of this Agreement and the Pilot Program by making available \$3 million within its existing authorities and available funding for system conservation efforts pursuant to the Pilot Program;

2.25 WHEREAS, other entities have expressed interest in potentially contributing capital for the Pilot Program; and

2.26 WHEREAS, the Parties desire to set forth their understanding as to the monetary contributions that will be provided by CAWCD, MWD, DW, SNWA, the United States, and any additional parties, with respect to these contributions and services.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the Parties agree as follows:

3. APPLICABILITY: Participation in System Conservation activities as part of the Pilot Program implemented pursuant to this Agreement within the Lower Division States shall be

limited to Entitlement Holders (as defined below). Participation in System Conservation activities as part of the Pilot Program implemented pursuant to this Agreement within the Upper Division States shall be limited to Upper Basin Colorado River Water Users (as defined below).

4. DEFINITIONS: For the purpose of this Agreement, the following definitions shall apply:

4.1 Colorado River Compact means the document signed on November 24, 1922, at Santa Fe, New Mexico, pursuant to an act of Congress approved August 19, 1921 (42 Stat. 171). The Colorado River Compact was approved in Section 13(a) of the Boulder Canyon Project Act.

4.2 Colorado River System shall have the meaning ascribed to such term in the Colorado River Compact.

4.3 Consolidated Decree means the decree entered by the United States Supreme Court in the matter of *Arizona v. California* on March 27, 2006 (547 U.S. 150).

4.4 Consumptive Use means diversions from the Colorado River System, less any return flow to the river that is available for consumptive use in the United States or in satisfaction of the Mexican Treaty Obligation. Consumptive use from the Colorado River includes the consumptive use of water drawn from the Colorado River System by underground pumping. The Mexican Treaty Obligation is set forth in the February 3, 1944 Water Treaty between Mexico and the United States, including supplements and associated Minutes of the International Boundary and Water Commission.

4.5 Entitlement Holder means a person, or entity, within the Lower Division States or Mexico that: (i) has an existing authorization to divert or order Colorado River water, (ii) with the consent of (i) is located within the water service area of (i); or (iii) has control of state appropriated water rights on the Muddy and Virgin Rivers, all as reasonably required for beneficial uses.

4.6 Local Funding Agencies means CAWCD, MWD, DW, and SNWA, all of which are public entities that use water from the Colorado River Basin for municipal purposes.



4.7 Lower Division States means Arizona, California, and Nevada, as defined in the Colorado River Compact.

4.8 Mainstream shall have the meaning ascribed to such term in the Consolidated Decree.

4.9 Pilot Program means the program described in this Agreement.

4.10 System Conservation means a voluntary, measurable reduction of consumptive use of Colorado River water, including the elimination of system losses or reduction in demands through increased efficiency, by an Entitlement Holder or Upper Basin Colorado River Water User through the Pilot Program. All water conserved as a result of the Pilot Program shall be for the sole purpose of increasing storage levels in Lakes Mead and Powell as a benefit to the Colorado River System, and shall not accrue to the benefit or use of any individual user. System Conservation does not include measures: (i) required by Reclamation under its existing contract(s) for delivery of water with an Entitlement Holder, (ii) required by Reclamation to avoid non-beneficial or unreasonable use determinations, (iii) implemented for the purpose of paying back an Inadvertent Overrun by an Entitlement Holder, (iv) implemented by the Entitlement Holder or an Upper Basin Colorado River Water User to meet consumptive use reduction obligations under any transfer, acquisition, or conservation agreement with another party, (v) implemented for monetary payment or other valuable consideration from any third-party not a signatory to this Agreement, (vi) for which an Entitlement Holder receives Intentionally Created Surplus or Intentionally Created Mexican Allocation credits; or (vii) voluntarily or administratively or judicially ordered to be undertaken by an Entitlement Holder or an Upper Basin Colorado River Water User for purposes other than System Conservation.

4.11 System Conservation Implementation Agreement means an agreement to implement System Conservation entered into between Reclamation and an Entitlement Holder or between an Upper Basin Colorado River Water User and the Upper Basin Contracting Entity. Local Funding Agencies shall be third-party beneficiaries of all System Conservation

Implementation Agreements, and shall be entitled to all rights thereunder including specifically the right of enforcement.

4.12 Upper Basin Colorado River Water User means a person or entity within an Upper Division State that has an existing authorization under applicable state law to divert Colorado River System water as reasonably required for beneficial uses.

4.13 Upper Basin Contracting Entity means an entity to be agreed upon by the Parties, such as, by way of example, the Upper Colorado River Commission, the Colorado River Basin Salinity Control Forum, an Upper Division State or States, or Reclamation.

4.14 Upper Division States means Colorado, New Mexico, Utah, and Wyoming, as defined in the Colorado River Compact.

5. GENERAL TERMS AND CONDITIONS:

5.1 Effective Date. This Agreement shall become effective upon the date set forth in Article 1 of this Agreement (the Effective Date) and shall remain in effect until the latter of: (i) two years from the Effective Date; or (ii) December 31 of the year in which the latest System Conservation Implementation Agreement expires.

5.2 Purpose. The purpose of this Agreement is to initiate a Pilot Program for System Conservation to determine whether System Conservation is a sufficiently cost-effective, robust, and feasible method to partially mitigate the impacts of salinity and ongoing drought on the Colorado River System by managing water elevation levels in Lakes Mead and Powell above critically low elevations as a first priority, with the ancillary benefit of enhancing flows in areas upstream of storage reservoirs.

5.3 Reclamation/Upper Basin Contracting Entity Responsibilities. Reclamation shall consult with the Local Funding Agencies, respective Basin States, and other appropriate entities regarding implementation of the Pilot Program. For projects in the Lower Division States, Reclamation shall process requests for and review of Pilot Program proposals, enter into and administer System Conservation Implementation Agreements with Entitlement Holders selected

for inclusion in the Pilot Program, and verify and document consumptive use reductions under the Pilot Program, consistent with this Agreement. For projects in the Upper Division States, the Upper Basin Contracting Entity shall enter into and administer System Conservation Implementation Agreements with Upper Basin Colorado River Water Users selected for inclusion in the Pilot Program. Prior to entering into any System Conservation Implementation Agreement, Reclamation or the Upper Basin Contracting Entity, as applicable, shall enter into a project specific funding agreement with the participating Local Funding Agencies providing for, among other things, the timing of Local Funding Agency contributions, and project specific performance metrics.

5.4 Sequence of Pilot Program Proposals. The Parties will seek proposals from Entitlement Holders following the effective date of this Agreement; provided that no proposals shall be sought until Reclamation has completed all appropriate documentation and approvals, including environmental compliance documentation, as appropriate. The Parties will begin seeking proposals from Upper Basin Colorado River Water Users for implementation during 2015, subject to consultation with the Upper Division States.

5.5 Selection of Pilot Program Participants. The Parties will jointly select Entitlement Holder and Upper Basin Colorado River Water User proposals for inclusion in the Pilot Program based on factors including, without limitation and not in order of importance, the following:

5.5.1 The consistency of the proposal with the requirements of this Agreement;

5.5.2 The need to implement geographically diverse conservation measures, including conservation in both the Upper and Lower Colorado River Basins, to most effectively demonstrate the efficacy of Colorado River System-wide efforts to reduce salinity and maximize the volume of water remaining in Lakes Mead and Powell;

5.5.3 The proposed cost per acre-foot of System Conservation;

5.5.4 The relative size of the proposed project;

5.5.5 The comparative ease or difficulty of administering the contract and verifying the proposed System Conservation, reduction in salinity, or increase in the quantity of water flowing into Lakes Mead and/or Powell;

5.5.6 The amount of time required to implement the activities needed to generate System Conservation;

5.5.7 Required environmental compliance;

5.5.8 Considering the character and relative amount of proposed reductions in consumptive use, the potential for third-party economic impacts that would not be adequately mitigated via compensation to be paid under the proposed program;

5.5.9 The number of intervening water users that are located between the proposed project and Lakes Mead or Powell;

5.5.10 The number and relative difficulty of obtaining any required third-party consents or forbearance agreements;

5.5.11 The degree to which the proposed project will generate measureable increases in flows or water quality that are beneficial for habitat and the environment;

5.5.12 The degree to which the proposed project is consistent with, or leverages additional funding from, other programs, including salinity control and Natural Resources Conservation Service (NRCS) programs; and

5.5.13 The location and timing of increases in flows or water quality from the proposed project.

5.5.14 In addition to the foregoing, the Parties shall consider and utilize, as appropriate, the evaluation criteria developed by Reclamation for the WaterSMART Program evaluation (attached as Attachment 1). Reclamation will document the utilization of the foregoing criteria as part of its consideration for any proposed System Conservation project as part of the Pilot Program.

5.6 Unanimity Required. The Parties' goal is that a System Conservation Implementation Agreement would receive approval by Reclamation and each of the Local Funding Agencies; provided, however, that this provision shall not preclude any of the Parties, or any combination of them, from entering into unrelated contracts with Entitlement Holders or Upper Basin Colorado River Water Users to conserve water in accordance with applicable law or any other program or contract. Further, if a Local Funding Agency does not agree with accepting a proposed System Conservation project into the Pilot Program, a System Conservation Implementation Agreement for the project may still be available, but no funds from the dissenting Local Funding Agency will be used to fund that project; provided, however, that in no event shall a System Conservation Implementation Agreement be executed without the consent of the Local Funding Agency (CAWCD, MWD, DW, or SNWA) located within the same state as the proposed System Conservation project. The Parties shall make no more than \$8.25 million of the funds made available pursuant to this Agreement for proposed System Conservation projects with Entitlement Holders. For proposed System Conservation projects with Upper Basin Colorado River Water users, the Parties shall: (i) seek input regarding potential and proposed projects from the members of the Colorado River Basin Salinity Control Forum; and (ii) approve a System Conservation Implementation Agreement only with the consent of the respective Governor's Representative of the Colorado River Basin state in which the proposed project is located. Within one year from the execution of this Agreement, the Local Funding Agencies shall meet and confer on the progress of implementing projects in the Upper Basin.

5.7 Form of System Conservation Implementation Agreement. Entitlement Holders and Upper Basin Colorado River Water Users selected for participation in the Pilot Program shall be required to execute a System Conservation Implementation Agreement with Reclamation or the Upper Basin Contracting Entity, as applicable. The form of the System Conservation Implementation Agreements may differ based upon the unique needs of each Entitlement Holder or Upper Basin Colorado River Water User and the type of System

Conservation being funded. If an existing agreement is established between a Party and the Entitlement Holder or Upper Colorado Basin River Water User prior to this Agreement, the Party may use that existing agreement and seek reimbursement through a System Conservation Implementation Agreement for its costs, provided that all water conserved as a result of that existing agreement shall be for the sole purpose of increasing storage levels in Lakes Mead and Powell as a benefit to the Colorado River System, and shall not accrue to the benefit or use of any individual user.

5.8 Payments to Participating Entitlement Holders and Upper Basin Colorado River Water Users. Compensation for System Conservation shall be paid by Reclamation or the Upper Basin Contracting Entity from the amounts contributed by the Local Funding Agencies and the funding available from Reclamation for the Pilot Program. Where feasible, Entitlement Holders and Upper Basin Colorado River Water Users shall be paid some or all of the required payments in arrears (after verification has occurred).

5.9 Coordination with NRCS. On-farm water conservation improvements that complement the voluntary water conservation projects proposed through this program may be considered for NRCS funding and technical assistance to the extent such assistance is available. Complementing NRCS Farm Bill programs include the Environmental Quality Incentive Program (EQIP) and Agricultural Water Enhancement Program (AWEP), which are the primary programs that address water quantity and water quality conservation practices. Reclamation will ensure that any proposed project is coordinated with the respective NRCS State Conservationist to assess opportunities for potential NRCS funding and technical assistance.

5.10 Evaluation of Pilot Program. The Local Funding Agencies and Reclamation will evaluate the results of the Pilot Program after its conclusion and consult with the seven Colorado River Basin States and other interested parties to determine whether the Pilot Program should be extended or a long-term System Conservation program should be adopted.

6. CAPITAL CONTRIBUTIONS:

6.1 United States. The United States, through Reclamation, will provide up to \$3 million in funding towards the total Pilot Program costs. Provided, however, that if additional Federal funding becomes available through grants as authorized by Congress, such money can be added to this Agreement without requiring additional contributions from the Local Funding Agencies or amendment of this Agreement.

6.2 Local Funding Agencies. The Local Funding Agencies shall contribute up to \$2 million each towards the Pilot Program costs on schedules that will be determined at such time as projects are approved for implementation pursuant to the Pilot Program. Any unobligated funds after implementing this Agreement, shall be returned to each Local Funding Agency in proportion to the amount contributed.

6.3 Other Entities. Other entities, such as non-governmental organizations, may also provide funding for System Conservation projects under the Pilot Program described in this Agreement by providing money through a Local Funding Agency.

7. ACCOUNTING FOR SYSTEM CONSERVATION WATER:

7.1 Conserved Water. In addition to commitments contained in System Conservation Implementation Agreements, with regard to System Conservation water created pursuant to the Pilot Program, the Local Funding Agencies agree not to request delivery of any of the System Conservation water created pursuant to the Pilot Program to any Entitlement Holder, Upper Basin Colorado River Water User, or a third-party. The System Conservation water created pursuant to this Agreement and a System Conservation Implementation Agreement shall accrue to the benefit of the overall Colorado River System, not for the benefit of any Local Funding Agency, System Conservation Implementation Agreement signatory, or third-party.

7.2 Accounting. Reclamation will provide information regarding the amount of any System Conservation water created by an Entitlement Holder pursuant to the Pilot Program in its annual Colorado River accounting and water use report prepared under Article V of the

Consolidated Decree. Reclamation will provide information regarding the amount of any System Conservation water created by an Upper Basin Colorado River Water User through independent reports and after consultation with the state in which the conservation took place. Reclamation will consult with the Parties on accounting and verification and will consult with the Parties prior to the publication of such data.

7.3 Duplication of Effort. The Parties may already have established programs or processes to calculate consumptive use reductions. For example, additional fallowing on the Virgin River could be tracked simultaneously with SNWA's Intentionally Created Surplus accounting. To the extent complementary efforts exist, Reclamation should utilize the information provided from these efforts. The Parties agree not to seek repayment for any additional costs related to calculating consumptive use reductions.

7.4 Overrun Payback Obligations. An Entitlement Holder that is paying back an overrun under the Inadvertent Overrun and Payback Policy may concurrently participate in the Pilot Program, but will first be obligated to meet its annual overrun payback obligation before forbearing any additional water available for System Conservation under this Agreement and would only be compensated for the additional water forborne beyond its payback obligations.

8. NON-WAIVER: No Party to this Agreement shall be considered to have waived any right hereunder except when such waiver of the right is given in writing. The failure of a Party to insist in any one or more instances upon strict performance of any provisions of this Agreement or to take advantage of any of its rights hereunder shall not be construed as a waiver of any such provisions or a relinquishment of any such rights for the future, but such provisions and rights shall continue and remain in full force and effect.

9. UNCONTROLLABLE FORCES: No Party shall be considered to be in default in the performance of any of its obligations under this Agreement when a failure of performance shall be due to any cause beyond the control of the Party affected, including but not limited to, facilities failure, flood, earthquake, storm, lightning, fire, epidemic, war, riot, civil disturbance,



labor disturbance, sabotage, and restraint by court or public authority which by exercise of due diligence and foresight such Party could not have reasonably expected to avoid. A Party rendered unable to fulfill any of its obligations under this Agreement by reason of an Uncontrollable Force shall give prompt written notice of such act to the other Parties and shall exercise due diligence to remove such inability with all reasonable dispatch.

10. REPRESENTATIONS AND WARRANTIES:

10.1 Each Party has all legal power and authority to enter into this Agreement and to perform its obligations hereunder on the terms set forth in this Agreement, and the execution and delivery hereof by each Party and the performance by each Party of its obligations hereunder shall not violate or constitute an event of default under the terms or provisions of any agreement, document, or instrument to which each of the Parties is a party or by which each Party is bound.

10.2 Each Party warrants and represents that the individual executing this Agreement on behalf of the Party has the full power and authority to bind the Party he or she represents to the terms of this Agreement.

10.3 This Agreement constitutes a valid and binding agreement of each Party, enforceable against each Party in accordance with its terms.

10.4 Each Party: (i) warrants and represents that such Party is authorized by, and has undertaken all prerequisite actions required by, applicable Federal and State laws and regulations to perform the obligations and exercise the rights contemplated herein, (ii) acknowledges that such warranty and representation is a material inducement to, and has been relied upon by, the other Parties in entering into this Agreement and performing their respective obligations hereinafter; and (iii) with respect to projects that are considered or approved for implementation pursuant to the Pilot Program, the Parties will cooperate to use reasonable best efforts in the support, preservation and defense thereof, including any lawsuit or administrative proceeding challenging the legality, validity or enforceability related to such project, and will to the extent appropriate enter into such agreements, including joint defense or common interest agreements,

as are necessary therefor; provided that each Party shall bear its own costs of participation and representation in any such matter.

11. GOVERNING LAW: This Agreement shall be interpreted, governed by, and construed under applicable Federal law. To the extent permissible under the Federal Rules of Civil Procedure and other applicable Federal authority, venue for adjudication of any disputes under this Agreement shall be in an appropriate Federal court.

12. BINDING EFFECT AND LIMITED ASSIGNMENT: The provisions of this Agreement shall apply to and bind the successors and assigns of the Parties upon receipt of written agreement to the terms of this Agreement, but no assignment or transfer of this Agreement or any right or interest therein shall be valid until approved in writing by all Parties. This Agreement is and shall be binding upon and shall inure to the benefit of the Parties and, upon dissolution, the legal successors and assigns of their assets and liabilities.

13. AMENDMENT, MODIFICATION, AND/OR SUPPLEMENT: This Agreement may be amended, modified, or supplemented only by the written agreement of the Parties. No amendment, modification, or supplement shall be binding unless it is in writing and signed by all Parties.

14. DRAFTING CONSIDERATIONS: Each Party and its counsel have participated fully in the drafting, review, and revision of this Agreement, each of whom is sophisticated in the matters to which this Agreement pertains, and no one Party shall be considered to have drafted this Agreement.

15. NOTICES: All notices and requests required or allowed under the terms of this Agreement shall be in writing and shall be mailed first class postage paid to the following entities at the following addresses:

RECLAMATION:

Regional Director  
Lower Colorado Region  
Attention: LC-1000  
500 Fir Street  
Boulder City, NV 89005

Regional Director  
Upper Colorado Region  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1147

CAWCD:

Central Arizona Water Conservation District  
23636 North 7<sup>th</sup> Street  
Phoenix, AZ 85024-3801  
Attn: General Manager

MWD:

The Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, CA 90054-0153  
Attn: General Manager

DW:

Denver Water  
1600 West 12<sup>th</sup> Avenue  
Denver, CO 80204-3412  
Attn: CEO/Manager

SNWA:

Southern Nevada Water Authority  
1001 South Valley View Boulevard, MS #485  
Las Vegas, NV 89153  
Attn: General Manager

A Party may change its address by giving the other Parties notice of the change in writing.

16. JUDICIAL REMEDIES NOT FORECLOSED: Nothing in this Agreement shall be construed: (i) as in any manner abridging, limiting, or depriving any Party of any means of enforcing any remedy either at law or in equity for the breach of any of the provisions hereof, or of any other remedy which it would otherwise have; or (ii) as depriving any Party of any defense thereto which would otherwise be available.

17. AVAILABILITY OF INFORMATION: Subject to applicable Federal laws and regulations, each Party to this Agreement shall have the right during office hours to examine and make copies of the other Party's books and records relating to matters covered by this Agreement.

18. CONTINGENT ON APPROPRIATION OR ALLOTMENT OF FUNDS: The expenditure or advance of any money or the performance of any obligation of the United States under this Agreement shall be contingent upon appropriation or allotment of funds. Absence of appropriation or allotment of funds shall not relieve the Parties from any obligations under this Agreement. No liability shall accrue to the United States in case funds are not appropriated or allotted.

19. OFFICIALS NOT TO BENEFIT: No Member of or Delegate to the Congress, or Resident Commissioner, or official of CAWCD, MWD, DW, or SNWA, or any Elector or Electors shall benefit from this Agreement other than as a water user or landowner in the same manner as other water users or landowners.

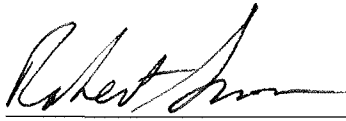
20. NO THIRD-PARTY BENEFICIARIES: This Agreement and any agreements made or actions taken pursuant hereto are made solely for the benefit of the Parties. No Party to this Agreement intends for this Agreement to confer any benefit upon any person or entity not a signatory to this Agreement, whether as a third-party beneficiary or otherwise.


21. COUNTERPARTS: This Agreement may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Agreement.

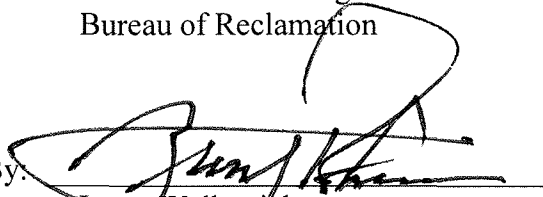
IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

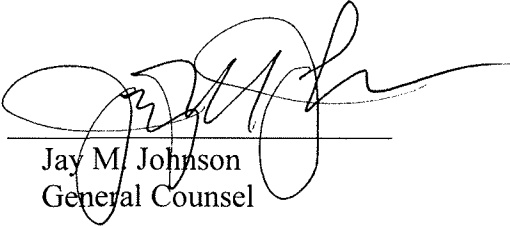
By: 

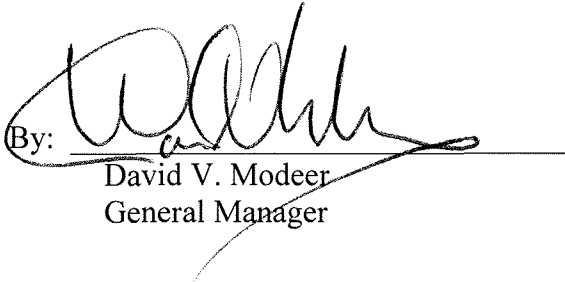
By:   
Terrance J. Fulp  
Lower Colorado Regional Director  
Bureau of Reclamation

By:   
Larry Walkoviak  
Upper Colorado Regional Director  
Bureau of Reclamation

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

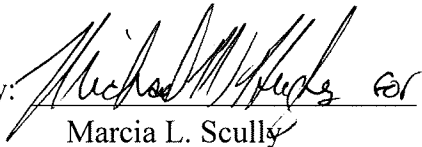
By:   
Jay M. Johnson  
General Counsel

By:   
David V. Modeer  
General Manager

Approved as to form:

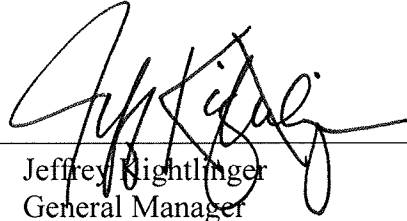
**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By:



Marcia L. Scully  
General Counsel

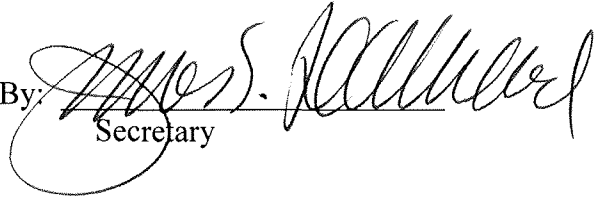
By:

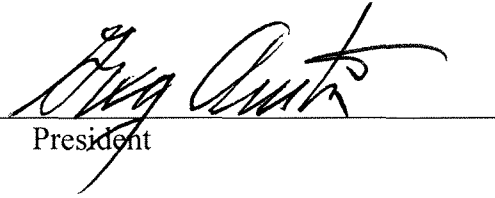


Jeffrey Nightlinger  
General Manager

Attest:

**DENVER BOARD OF WATER  
COMMISSIONERS**

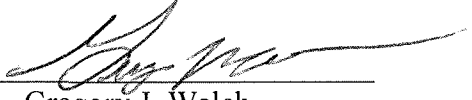
By:   
Secretary

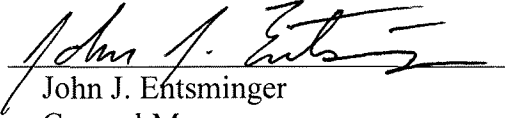
By:   
President



Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By:   
Gregory J. Walch  
General Counsel

By:   
John J. Entsminger  
General Manager

**ATTACHMENT 1 - WaterSMART Program Evaluation Criteria**

V.A.1 Evaluation Criterion A: Water Conservation

Subcriterion No. A.1—Water Conservation

Subcriterion No. A.1(a)—Quantifiable Water Savings

Subcriterion No. A.1(b)—Improved Water Management

Subcriterion No. A.2—Percentage of Total Supply

Subcriterion No. A.3—Reasonableness of Costs

V.A.2 Evaluation Criterion B: Energy-Water Nexus

Subcriterion No. B.1—Implementing Renewable Energy

Projects Related to Water Management and Delivery

Subcriterion No. B.2—Increasing Energy Efficiency in Water Management

V.A.3 Evaluation Criterion C: Benefits to Endangered Species

V.A.4 Evaluation Criterion D: Water Marketing (*\*not applicable*)

V.A.5 Evaluation Criterion E: Other Contributions to Water Supply Sustainability

V.A.6 Evaluation Criterion F: Implementation and Results

Subcriterion No. F.1—Project Planning

Subcriterion No. F.2—Readiness to Proceed

Subcriterion No. F.3—Performance Measures

V.A.7 Evaluation Criterion G: Additional Non-Federal Funding

V.A.8 Evaluation Criterion H: Connection to Reclamation Project Activities

Agreement No. 14-XX-30-W0574  
Amendment No. 1

AGREEMENT AMONG  
THE UNITED STATES OF AMERICA, THROUGH THE  
DEPARTMENT OF THE INTERIOR,  
BUREAU OF RECLAMATION,  
THE CENTRAL ARIZONA WATER CONSERVATION DISTRICT,  
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,  
DENVER WATER, AND  
THE SOUTHERN NEVADA WATER AUTHORITY,  
FOR A PILOT PROGRAM FOR FUNDING THE CREATION OF COLORADO RIVER  
SYSTEM WATER THROUGH VOLUNTARY WATER CONSERVATION AND  
REDUCTIONS IN USE

1. PREAMBLE: THIS AMENDMENT NO. 1 (“Amendment”) is entered into this 2<sup>th</sup> day of August, 2015 (“Effective Date”), by and between the UNITED STATES OF AMERICA (“United States”), represented by the Secretary of the Interior (“Secretary”) acting through the officials executing this Agreement, the CENTRAL ARIZONA WATER CONSERVATION DISTRICT, a multi-county water conservation district duly organized and existing under the laws of the State of Arizona (“CAWCD”), the METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a regional public water district duly organized under California law (“MWD”), the CITY AND COUNTY OF DENVER, acting by and through its BOARD OF WATER COMMISSIONERS, a municipal corporation and political subdivision of the State of Colorado (“Denver Water” or “DW”), and the SOUTHERN NEVADA WATER AUTHORITY, a political subdivision of the State of Nevada (“SNWA”), each being referred to individually as “Party” and collectively as the “Parties”, and pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), designated the Reclamation Act, and acts amendatory thereof or supplementary thereto, the Act of March 4, 1921 referred to as the Contributed Funds Act (41 Stat. 1404, 43 U.S.C. § 395), the Act of January 12, 1927 (44 Stat. 957, 43 U.S.C. § 397a), the

Act of December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, the Act of April 11, 1956 (70 Stat. 105), designated the Colorado River Storage Project Act; the Act of September 30, 1968 (82 Stat. 885), designated the Colorado River Basin Project Act, the Act of June 24, 1974 (88 Stat. 266), designated the Colorado River Basin Salinity Control Act, as amended, the Act of March 30, 2009 (123 Stat. 991), known as the Omnibus Public Land Management Act, and consistent with Section 206 of Title II of Division D of the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113-235).

2. RECITALS:

2.1 WHEREAS, on July 30, 2014, the Parties entered into Agreement No. 14-XX-30-W0574 for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use (“the 2014 Funding Agreement”);

2.2 WHEREAS, under the 2014 Funding Agreement Reclamation committed to making available up to \$3 million within its existing authorities and available funding for system conservation efforts pursuant to the Pilot Program; and

2.3 WHEREAS, the Parties desire, pursuant to Federal Reclamation law, to amend the 2014 Funding Agreement to increase Reclamation’s funding of the Pilot Program from up to \$3 million to up to \$6 million.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the Parties agree as follows:

3. PURPOSE OF AMENDMENT: The purpose of this Amendment is to provide additional funding by the United States for the Pilot Program.

4. AMENDMENT OF AGREEMENT NO. 14-XX-30-W0574:

4.1 The third sentence in Section 5.6 Unanimity Required. of the 2014 Funding Agreement (12<sup>th</sup> line) is hereby amended to read as follows:

“The Parties shall make no more than \$11.25 million of the funds made available pursuant to this Agreement for proposed System Conservation projects with Entitlement Holders.”

4.2 Section 6.1 of the 2014 Funding Agreement is hereby amended to read as follows:

“6.1 United States. The United States, through Reclamation, will provide up to \$6 million in funding towards the total Pilot Program costs. Provided, however, that if additional Federal funding becomes available through grants as authorized by Congress, such money can be added to this Agreement without requiring additional contributions from the Local Funding Agencies or amendment of this Agreement.”

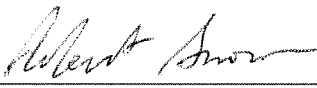
5. OTHER PROVISIONS UNAFFECTED: Except as expressly modified by this Amendment, all other provisions of Agreement No. 14-XX-30-W0574 remain in full force and effect.


6. COUNTERPARTS: This Amendment may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Amendment.

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment on the day and year first written above.

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By: 

By:   
Terrance J. Fulp  
Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_  
Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By: \_\_\_\_\_

By: \_\_\_\_\_

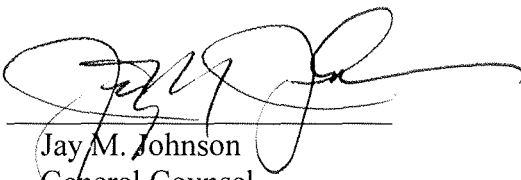
Terrance J. Fulp  
Lower Colorado Regional Director  
Bureau of Reclamation


By:  \_\_\_\_\_

Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

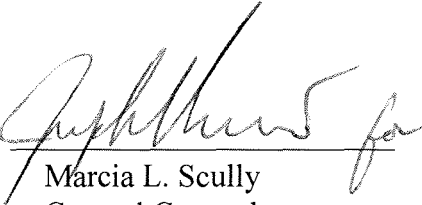
By:   
Jay M. Johnson  
General Counsel

By:   
Theodore "Ted" C. Cooke  
Interim General Manager



Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**


By:   
\_\_\_\_\_  
Marcia L. Scully  
General Counsel

By:   
\_\_\_\_\_  
Jeffrey Kightlinger  
General Manager

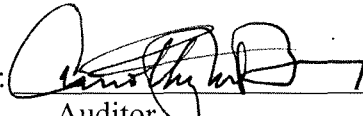
Attest:

**CITY AND COUNTY OF DENVER,  
acting by and through its  
BOARD OF WATER  
COMMISSIONERS**

By:   
Legal Division


By:   
James S. Lochhead  
CEO/Manager

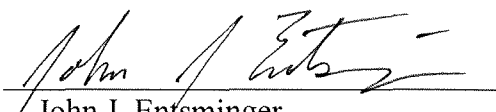
**REGISTERED AND  
COUNTERSIGNED:  
CITY AND COUNTY OF DENVER**

By:   
Auditor

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By:   
\_\_\_\_\_  
Gregory J. Walch  
General Counsel

By:   
\_\_\_\_\_  
John J. Entsminger  
General Manager

Agreement No. 14-XX-30-W0574  
Amendment No. 2

AGREEMENT AMONG  
THE UNITED STATES OF AMERICA, THROUGH THE  
DEPARTMENT OF THE INTERIOR,  
BUREAU OF RECLAMATION,  
THE CENTRAL ARIZONA WATER CONSERVATION DISTRICT,  
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,  
DENVER WATER, AND  
THE SOUTHERN NEVADA WATER AUTHORITY,  
FOR A PILOT PROGRAM FOR FUNDING THE CREATION OF COLORADO RIVER  
SYSTEM WATER THROUGH VOLUNTARY WATER CONSERVATION AND  
REDUCTIONS IN USE

1. PREAMBLE: THIS AMENDMENT NO. 2 ("Amendment No. 2") is entered into this 8<sup>th</sup> day of March, 2016 ("Effective Date"), by and between the UNITED STATES OF AMERICA ("United States"), represented by the Secretary of the Interior ("Secretary") acting through the officials executing this Agreement, the CENTRAL ARIZONA WATER CONSERVATION DISTRICT, a multi-county water conservation district duly organized and existing under the laws of the State of Arizona ("CAWCD"), THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a regional public water district duly organized under California law ("MWD"), the CITY AND COUNTY OF DENVER, acting by and through its BOARD OF WATER COMMISSIONERS, a municipal corporation and political subdivision of the State of Colorado ("Denver Water" or "DW"), and the SOUTHERN NEVADA WATER AUTHORITY, a political subdivision of the State of Nevada ("SNWA"), each being referred to individually as "Party" and collectively as the "Parties", and pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), designated the Reclamation Act, and acts amendatory thereof or supplementary thereto, the Act of March 4, 1921 referred to as the Contributed Funds Act (41 Stat. 1404, 43 U.S.C. § 395), the Act of January 12, 1927 (44 Stat. 957, 43 U.S.C. § 397a), the Act of December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, the Act of April 11, 1956 (70 Stat. 105), designated the Colorado River Storage Project Act;

the Act of September 30, 1968 (82 Stat. 885), designated the Colorado River Basin Project Act, the Act of June 24, 1974 (88 Stat. 266), designated the Colorado River Basin Salinity Control Act, as amended, the Act of March 30, 2009 (123 Stat. 991), known as the Omnibus Public Land Management Act, and consistent with Section 206 of Title II of Division D of the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113-235).

2. RECITALS:

2.1 WHEREAS, on July 30, 2014, the Parties entered into Agreement No. 14-XX-30-W0574 for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use (“the 2014 Funding Agreement”) which was amended on August 12, 2015 to increase Reclamation’s funding ceiling for the Pilot Program; and

2.2 WHEREAS, the Parties desire to further amend the 2014 Funding Agreement, as amended, to provide for increased funding from a Party by notifying the other Parties in writing without the need to further amend the 2014 Funding Agreement.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the Parties agree as follows:

3. PURPOSE OF AMENDMENT NO. 2: The purpose of this Amendment No. 2 is to clarify provisions in the 2014 Funding Agreement, as amended, for providing additional funding for the Pilot Program.

4. AMENDMENT OF AGREEMENT NO. 14-XX-30-W0574, AS AMENDED:

4.3 Section 6.4 is hereby added to Section 6 of the 2014 Funding Agreement, as amended.

“6.4 Additional Funding. Notwithstanding (1) the up to \$6 million funding contribution from the United States, through Reclamation, specified in Section 6.1, and (2) the up to \$2 million funding contribution from a Local Funding Agency specified in Section 6.2, a Party may provide additional funding to the Pilot Program including funding originating from another entity as provided

in Section 6.3. If a Party provides additional funding, the Parties may make such funding available for proposed System Conservation projects notwithstanding the funding limit in Section 5.6, as amended. A Party that intends to provide such additional funds will notify and consult with the other Parties. During the consultation process, the geographic distribution of additional funds between potential projects in the Upper and Lower Basins for proposed System Conservation projects will be determined by the Parties. If, after the consultation among the Parties there are no objections from any Party, no sooner than 15 days after consultation with the other Parties, the Party that intends to provide the additional funds will notify the other Parties in writing of the amount and timing of availability of such additional funds; provided however, if during the consultation there is an objection from any Party, the Parties agree to meet and consult before any additional funding is provided. Such written notification shall be considered an exhibit to this Agreement. Any unobligated additional funds after implementing this Agreement shall be returned to each Party in proportion to the total amount of funds contributed.”


5. OTHER PROVISIONS UNAFFECTED: Except as expressly modified by this Amendment No. 2, all other provisions of Agreement No. 14-XX-30-W0574, and Amendment No. 1 remain in full force and effect.


6. COUNTERPARTS: This Amendment No. 2 may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Amendment No. 2.

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment No. 2 on the day and year first written above.

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By:   
Robert Snow, Esq.  
Attorney-Advisor

By:   
Terrance J. Fulp, Ph.D.  
Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_  
Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation



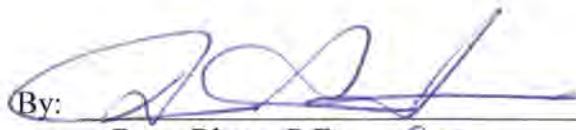
IN WITNESS WHEREOF, the Parties hereto have executed this Amendment No. 2 on the day and year first written above.

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By: \_\_\_\_\_  
Robert Snow, Esq.  
Attorney-Advisor


By: \_\_\_\_\_  
Terrance J. Fulp, Ph.D.  
Lower Colorado Regional Director  
Bureau of Reclamation


By:  \_\_\_\_\_  
Brent Rhee, P.E. *for*  
Upper Colorado Regional Director  
Bureau of Reclamation



Approved as to form:

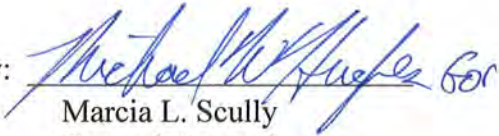
**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By:   
Jay M. Johnson  
General Counsel

By:   
Theodore C. Cooke  
Interim General Manager

Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By:   
Marcia L. Scully  
General Counsel

By:   
Jeffrey Kightlinger  
General Manager

Attest:

**CITY AND COUNTY OF DENVER,  
acting by and through its  
BOARD OF WATER  
COMMISSIONERS**

By:

  
Legal Division

By:

  
James S. Lochhead  
CEO/Manager

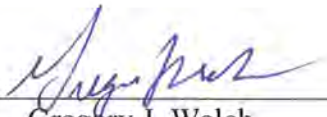
**REGISTERED AND  
COUNTERSIGNED:  
CITY AND COUNTY OF DENVER**

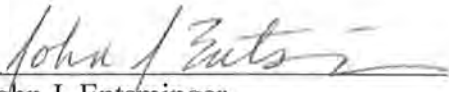
By:

  
Auditor

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By:   
\_\_\_\_\_  
Gregory J. Walch  
General Counsel

By:   
\_\_\_\_\_  
John J. Entsminger  
General Manager

Agreement No. 14-XX-30-W0574  
Amendment No. 3

AGREEMENT AMONG  
THE UNITED STATES OF AMERICA, THROUGH THE  
DEPARTMENT OF THE INTERIOR,  
BUREAU OF RECLAMATION,  
THE CENTRAL ARIZONA WATER CONSERVATION DISTRICT,  
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,  
DENVER WATER, AND  
THE SOUTHERN NEVADA WATER AUTHORITY,  
FOR A PILOT PROGRAM FOR FUNDING THE CREATION OF COLORADO RIVER  
SYSTEM WATER THROUGH VOLUNTARY WATER CONSERVATION AND  
REDUCTIONS IN USE

1. PREAMBLE: THIS AMENDMENT NO. 3 ("Amendment") is entered into this 6<sup>th</sup> day of July, 2018 ("Effective Date"), by and between the UNITED STATES OF AMERICA ("United States"), represented by the Secretary of the Interior ("Secretary") acting through the officials executing this Agreement, the CENTRAL ARIZONA WATER CONSERVATION DISTRICT, a multi-county water conservation district duly organized and existing under the laws of the State of Arizona ("CAWCD"), THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a regional public water district duly organized under California law ("MWD"), CITY AND COUNTY OF DENVER acting by and through its BOARD OF WATER COMMISSIONERS, a municipal corporation and political subdivision of the State of Colorado ("Denver Water" or "DW"), and the SOUTHERN NEVADA WATER AUTHORITY, a political subdivision of the State of Nevada ("SNWA"), each being referred to individually as "Party" and collectively as the "Parties", and pursuant to the Act of Congress approved June 17, 1902 (32 Stat. 388), designated the Reclamation Act, and acts amendatory thereof or supplementary thereto, the Act of March 4, 1921 referred to as the Contributed Funds Act (41 Stat. 1404, 43 U.S.C. § 395), the Act of January 12, 1927 (44 Stat. 957, 43 U.S.C. § 397a), the Act of December 21, 1928 (45 Stat. 1057), designated the Boulder Canyon Project Act, the Act of April 11, 1956 (70 Stat. 105), designated the Colorado River Storage Project Act; the Act of September 30, 1968 (82 Stat. 885), designated the Colorado River Basin Project Act, the Act of June 24, 1974 (88 Stat. 266),

designated the Colorado River Basin Salinity Control Act, as amended, the Act of March 30, 2009 (123 Stat. 991), known as the Omnibus Public Land Management Act, and consistent with Section 206 of Title II of Division D of the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113-235).

2. RECITALS:

2.1 WHEREAS, on July 30, 2014, the Parties entered into Agreement No. 14-XX-30-W0574 for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use (“2014 Funding Agreement”), which was amended on August 12, 2015 to increase Reclamation’s funding ceiling for the Pilot Program, and on March 8, 2016 to clarify provisions in the 2014 Funding Agreement, as amended, for providing additional funding for the Pilot Program;

2.2 WHEREAS, under the 2014 Funding Agreement, as amended, entities other than the Parties, such as non-governmental organizations, could provide funding for System Conservation projects by providing money through one of the Local Funding Agencies; and

2.3 WHEREAS, the Parties desire to further amend the 2014 Funding Agreement, as amended, to provide that entities other than the Parties may, under certain conditions, participate in both funding Pilot Program costs and reviewing System Conservation proposals.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the Parties agree as follows:

3. PURPOSE OF AMENDMENT NO. 3: The purpose of this Amendment No. 3 is to provide that entities other than the Parties may, under certain conditions, participate in both the funding of Pilot Program costs and the review of System Conservation proposals.

4. AMENDMENT OF AGREEMENT NO. 14-XX-30-W0574, AS AMENDED:

4.1 Section 5.6 of the 2014 Funding Agreement, as amended, is deleted in its entirety and replaced with the following:

“5.6 Unanimity and Provisions. The Parties’ goal is that a System Conservation

Implementation Agreement would receive approval by Reclamation, each of the Local Funding Agencies, and each Third-Party Contributor; provided, however, that this provision shall not preclude any of the Parties or Third-Party Contributors, or any combination of them, from entering into unrelated contracts with Entitlement Holders or Upper Basin Colorado River Water Users to conserve water in accordance with applicable law or any other program or contract. Further, if a Local Funding Agency or a Third-Party Contributor does not agree with accepting a proposed System Conservation project into the Pilot Program, a System Conservation Implementation Agreement for the project may still be available, but no funds from the dissenting Local Funding Agency, nor funds from a dissenting Third-Party Contributor, will be used to fund that project; provided, however, that in no event shall a System Conservation Implementation Agreement be executed without the consent of the Local Funding Agency (CAWCD, MWD, DW, or SNWA) located within the same state as the proposed System Conservation project, and in no event shall the dissent of a Third-Party Contributor alone prevent the execution of a System Conservation Implementation Agreement. For proposed System Conservation projects with Upper Basin Colorado River Water Users, the Parties shall: (i) seek input regarding potential and proposed projects from the Executive Director and Secretary of the Upper Colorado River Commission; and (ii) approve a System Conservation Implementation Agreement only with the consent of the respective Governor's Representative of the Colorado River Basin state in which the proposed project is located."

4.2 Section 6.2 of the 2014 Funding Agreement, as amended, is deleted in its entirety and replaced with the following:

"6.2 Local Funding Agencies. The Local Funding Agencies will annually agree by December 1, to the amount of funds each will contribute toward the Pilot Program in the next succeeding year, if any, with such contributions to be in accordance with schedules that will be determined at such time as projects are approved for implementation pursuant to the Pilot Program. Upon termination of this Agreement, any unobligated funds



contributed by a Local Funding Agency will be returned to the Local Funding Agency within 60 days.”

4.3 Section 6.3 of the 2014 Funding Agreement, as amended, is deleted in its entirety and replaced with the following:

“6.3 Additional Funding Parties. Other entities, such as non-governmental organizations, may also provide funding for System Conservation projects under the Pilot Program described in this Agreement by providing money through a Local Funding Agency. Any such agreement made under this Pilot Program between another entity and a Local Funding Agency shall be provided to the other Parties. Or entities not a Party to this Agreement (“Third-Party Contributors”) may, subject to the prior approval of all Parties hereto, participate in funding Pilot Program costs and review of System Conservation proposals by executing a Third-Party Contribution Agreement on the terms and in the form attached hereto as Exhibit A.”

4.4 Section 6.4, added by Amendment No. 2 to the 2014 Funding Agreement, is amended as follows:

The first sentence is amended to read, “Notwithstanding the funding contribution from the United States, through Reclamation, specified in Section 6.1, as amended, and the funding contribution from a Local Funding Agency specified in Section 6.2, as amended, a Party may provide additional funding to the Pilot Program including funding originating from another entity as provided in Section 6.3, as amended.”

4.5 Review of Projects. All Third-Party Contributors that agree to participate in the review of System Conservation proposals will participate to the same extent as the Parties in the exercise of Sections 5.5 and 5.6, as amended, of the 2014 Funding Agreement.




5. OTHER PROVISIONS UNAFFECTED: Except as expressly modified by this Amendment No. 3, all other provisions of the 2014 Funding Agreement, and Amendment Nos. 1 and 2 remain in full force and effect.
6. COUNTERPARTS: This Amendment No. 3 may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Amendment No. 3.

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment No. 3 on the day and year first written above.

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By:

  
Robert Snow, Esq.  
Attorney-Advisor

By: \_\_\_\_\_

Terrance J. Fulp, Ph. D.  
Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_


Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

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Attorney-Advisor

By:  \_\_\_\_\_  
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Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_  
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Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_  
Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By:   
Jay M. Johnson  
General Counsel

By:   
Theodore C. Cooke  
General Manager

Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By:



Marcia L. Scully  
General Counsel

By:



Jeffrey Kightlinger  
General Manager

ATTESTED:

By: 

Secretary

**CITY AND COUNTY OF DENVER,  
acting by and through its  
BOARD OF WATER COMMISSIONERS**

By: 

President

DATE: 6-13-18

APPROVED:

By: 

Chief External Affairs Officer

**REGISTERED AND COUNTERSIGNED:  
CITY AND COUNTY OF DENVER**

By: 

Timothy M. O'Brien, CPA  
Auditor

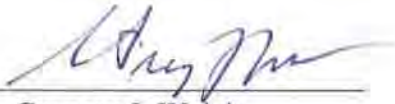
APPROVED AS TO FORM:

By: 

Office of General Counsel

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By:   
\_\_\_\_\_  
Gregory J. Walch  
General Counsel

By:   
\_\_\_\_\_  
John J. Entsminger  
General Manager



Agreement No. 14-XX-30-W0574

Amendment No. 3

Exhibit A

Third-Party Contribution Agreement

### Third-Party Contribution Agreement

This Third-Party Contribution Agreement is entered into this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, pursuant to Section 6.3 of Agreement No. 14-XX-30-W0574, the Agreement Among the United States of America, through the Department of the Interior, Bureau of Reclamation (“Reclamation”), the Central Arizona Water Conservation District (“CAWCD”), The Metropolitan Water District of Southern California (“MWD”), the City and County of Denver acting by and through its Board of Water Commissioners, a municipal corporation and political subdivision of the State of Colorado (“Denver Water” or “DW”), and the Southern Nevada Water Authority (“SNWA”), for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use, as amended (“2014 Funding Agreement”). The signatories to the 2014 Funding Agreement are referred to herein collectively as the “2014 Parties,” and the 2014 Parties and the Third-Party Contributor individually as a “Party” and collectively as the “Parties.” Pursuant to the 2014 Funding Agreement, “Local Funding Agencies” means CAWCD, MWD, DW, and SNWA. “Local Funding Agency” means either CAWCD, MWD, DW, or SNWA as applicable for a particular agreement.

Third-Party Contributor: \_\_\_\_\_

Additional Donor(s): \_\_\_\_\_

1. Recitals.

- A. Section 6.3 of the 2014 Funding Agreement originally provided that entities other than the 2014 Parties, such as non-governmental organizations, could provide funding for System Conservation projects under the Pilot Program described in that agreement by providing money through a Local Funding Agency.
- B. Through Amendment No. 3 to the 2014 Funding Agreement, the 2014 Parties amended Section 6.3 to provide that entities other than the 2014 Parties may, under certain conditions, participate in both funding Pilot Program costs and review of System Conservation proposals.
- C. Amended Section 6.3 states that entities not a party to the 2014 Funding Agreement (“Third-Party Contributors”) “may, subject to the prior approval of all Parties hereto, participate in funding Pilot Program costs and review of System Conservation proposals by executing a Third-Party Contribution Agreement on the terms and in the form attached hereto as Exhibit A.” This Agreement serves as an Exhibit A agreement to Amendment No. 3 to the 2014 Funding Agreement.

Now, therefore, the 2014 Parties and the Third-Party Contributor agree as follows:

- 2. Term. This Agreement will terminate on December 31, \_\_\_\_\_, but may be renewed for subsequent one calendar-year terms in accordance with the provisions herein.
- 3. Third-Party Contributions. For the term of calendar year \_\_\_\_\_, and for any renewal term, the Third-Party Contributor agrees to provide commitments for funding (“Funding

Commitments”) for Program Costs no less than either: i) the amount of funding provided in that term by the individual Local Funding Agency which is contributing the least amount of funding; or, ii) a lesser amount agreed upon by the 2014 Parties and by the Third-Party Contributor. For the calendar year \_\_\_\_ term, this Third-Party Contributor amount is \$ \_\_\_\_ million. For purposes of this Agreement, Funding Commitments for the Third-Party Contributor may consist of the aggregate of (i) contributions committed directly by the Third-Party Contributor for Program Costs (“Direct Contributions”) that are available for use during the applicable term (i.e. contributions can be provided prior to the applicable term but must be available for use within the applicable term); and (ii) contributions committed for Program Costs from other parties (“Additional Donors”) if such Additional Donors have provided written confirmation that the Third-Party Contributor may include the Additional Donor contributions in determining the Third-Party Contributor’s Funding Commitments for the purpose of this Agreement. Additional Donors and their contributions will be identified to the 2014 Parties. The 2014 Parties acknowledge that the Third-Party Contributor’s Funding Commitment is contingent upon the Third-Party Contributor’s internal approval for Direct Contributions and upon receipt of funding commitments from one or more Additional Donors, if applicable. Third-Party Contributor must provide evidence of its Funding Commitments for the initial calendar year term no later than ten days after the execution of this Agreement.

- 3.1 The Parties further acknowledge that, absent approval by the Upper Colorado River Commission (“UCRC”) and amendment of the May 13, 2015 Agreement to Facilitate the System Conservation Pilot Program in the Upper Colorado River Basin, as amended, between the UCRC and the 2014 Parties, the UCRC shall not be bound to the terms of this Agreement.
- 3.2 For the initial calendar year term and any renewal term, and subject to any internal approval described above, and upon a determination of the amount to be contributed for System Conservation projects, the Third-Party Contributor will provide funding (provided either directly as a Direct Contribution or indirectly as received through an agreement with one or more Additional Donors);
  - a. As invoiced by Reclamation for Lower Basin System Conservation projects or,
  - b. To the UCRC as invoiced for Upper Basin System Conservation projects, subject to the limitations in Paragraph 3.1 of this Agreement,with payment due 30 days from the day the invoice was received by the Third-Party Contributor.

#### 4. Review of Proposals.

- 4.1. The 2014 Parties will select projects pursuant to the 2014 Agreement, as amended, and the 2015 Agreement to Facilitate the System Conservation Pilot Program in the Upper Colorado River Basin between the UCRC and the 2014 Parties, as amended.

- 4.2. Subject to Paragraph 3.1 of this Agreement, the Third-Party Contributor may, at its election, participate in the review of all System Conservation proposals for the applicable term in accordance with Sections 5.5 and 5.6 of the 2014 Funding Agreement, as amended. If having elected to participate, a representative of the Third-Party Contributor and/or a designated alternate, could participate in the review of System Conservation proposals. For the term of calendar year \_\_\_\_, the Third-Party Contributor has elected i) ( ) to participate; or ii) ( ) to not participate.
- 4.3. Pursuant to Section 5.6 of the 2014 Funding Agreement, as amended, the Agreement does not preclude any Third-Party Contributor from entering into unrelated contracts with Lower Basin Entitlement Holders or Upper Basin Colorado River Water Users to conserve water in accordance with applicable law or any other program or contract.
- 4.4. A Third-Party Contributor may choose not to fund a particular project. While Third-Party Contributors may participate in the review of System Conservation proposals subject to Paragraph 3.1 of this Agreement, in no event shall the dissent of a Third-Party Contributor alone prevent the execution of a System Conservation Implementation Agreement, as project selection is ultimately subject to the provisions of Section 5.6 of the 2014 Funding Agreement, as amended.
5. Renewal.
  - 5.1. Renewal of this Agreement for any calendar year is subject to the unanimous approval of all of the 2014 Parties and the Third-Party Contributor. If there is unanimous support from the 2014 Parties to renew the agreement, then they will, by December 1, \_\_\_\_ and by December 1 of any renewal term, provide to Third-Party Contributor written notice of the opportunity to renew. Such notice will set forth the amount of funding, if any, that each of the 2014 Parties will provide for System Conservation projects in the next succeeding calendar year.
  - 5.2. On or before December 31, \_\_\_\_ for purposes of the first renewal or December 31 of any renewal term, or another date that is mutually agreed to in writing by the Third-Party Contributor and the 2014 Parties, the Third-Party Contributor must provide the 2014 Parties written notice of its Funding Commitment for the first or subsequent renewal term, respectively, and indicate whether it will participate in the review of System Conservation proposals. The notice of Funding Commitment will include the amount of Direct Contributions by the Third-Party Contributor and the identity and the amount of contributions to be provided by one or more Additional Donors, as applicable.
  - 5.3. Without written notice of the intent to renew, this Agreement will automatically expire, on January 1 of the year after the initial calendar year term or January 1 of the year following any renewal term.
6. Return of Funds. Upon the expiration of this Agreement, any unobligated funds contributed by Third-Party Contributor will be returned to Third-Party Contributor within sixty (60) days. If renewed, any unobligated funds of Third-Party Contributor may either be returned to

Third-Party Contributor or applied toward its required contribution for the renewal term, as specified by the invoicing.

7. General Provisions.

7.1. Representations and Warranties.

- a. Each Party has all legal power and authority to enter into this Agreement and to perform its obligations hereunder on the terms set forth in this Agreement, and the execution and delivery hereof by each Party and the performance by each Party of its obligations hereunder shall not violate or constitute an event of default under the terms or provisions of any agreement, document, or instrument to which each of the Parties is a party or by which each Party is bound. Each Party warrants and represents that the individual executing this Agreement on behalf of the Party has the full power and authority to bind the Party he or she represents to the terms of this Agreement. This Agreement constitutes a valid and binding agreement of each Party, enforceable against each Party in accordance with its terms.
- b. Third-Party Contributor acknowledges and agrees that its provision of funding hereunder does not ensure the funding of any particular System Conservation project. No Party hereto makes any representation or warranty as to the effect of any System Conservation project, or the cumulative effect of System Conservation projects, on conservation efforts, lake levels, stream flows, the availability of water, or water quality.

- 7.2. Miscellaneous. This Agreement shall bind and inure to the benefit of the Parties and their successors and assigns. This Agreement shall be interpreted, governed by, and construed under applicable Federal law. To the extent permissible under the Federal Rules of Civil Procedure and other applicable Federal authority, venue for adjudication of any disputes under this Agreement shall be in an appropriate Federal court. This document contains the entire agreement between the Parties with respect to the subject matter hereof. Any failure to enforce any provision of this Agreement shall not constitute a waiver thereof or of any other provision hereof. This Agreement may not be amended, nor any obligation waived, except by a writing signed by the Parties. No assignment or transfer of this Agreement or any right or interest therein shall be valid until approved in writing by all Parties. This Agreement may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Agreement.

- 7.3. Notices. All notices and requests required or allowed under the terms of this Agreement shall be in writing and shall be mailed first class postage paid to the following entities at the following addresses:

[Third-Party Contributor]  
[Address]  
[Address]  
Attn:

Reclamation:

Regional Director  
Lower Colorado Region  
Attention: LC-1000  
500 Fir Street  
Boulder City, NV 89005

Regional Director  
Upper Colorado Region  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1147

Central Arizona Water Conservation District  
23636 North 7th Street  
Phoenix, AZ 85024-3801  
Attn: General Manager

The Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, CA 90054-0153  
Attn: General Manager

Denver Water  
1600 West 12th Avenue  
Denver, CO 80204-3412  
Attn: CEO/Manager

Southern Nevada Water Authority  
1001 South Valley View Boulevard, MS #485  
Las Vegas, NV 89153  
Attn: General Manager

A Party may change its address by giving the other Parties notice of the change in writing.



IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.

Approved as to form:

**[THIRD-PARTY CONTRIBUTOR]**

By: \_\_\_\_\_

By: \_\_\_\_\_

[Name]

[Title]

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By: \_\_\_\_\_

Robert Snow, Esq.  
Attorney-Advisor

By: \_\_\_\_\_

Terrance J. Fulp, Ph. D.  
Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_

Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By: \_\_\_\_\_  
Jay M. Johnson  
General Counsel

By: \_\_\_\_\_  
Theodore C. Cooke  
General Manager

Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By: \_\_\_\_\_  
Marcia L. Scully  
General Counsel

By: \_\_\_\_\_  
Jeffrey Kightlinger  
General Manager

Approved as to form:

**CITY AND COUNTY OF DENVER,  
ACTING BY AND THROUGH ITS  
BOARD OF WATER  
COMMISSIONERS**

By: \_\_\_\_\_  
Office of General Counsel

By: \_\_\_\_\_  
James S. Lochhead  
CEO/Manager

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By: \_\_\_\_\_  
Gregory J. Walch  
General Counsel

By: \_\_\_\_\_  
John J. Entsminger  
General Manager



**Third-Party Contribution Agreement**

This Third-Party Contribution Agreement is entered into this 6<sup>th</sup> day of July, 2018, pursuant to Section 6.3 of Agreement No. 14-XX-30-W0574, the Agreement Among the United States of America, through the Department of the Interior, Bureau of Reclamation ("Reclamation"), the Central Arizona Water Conservation District ("CAWCD"), The Metropolitan Water District of Southern California ("MWD"), the City and County of Denver acting by and through its Board of Water Commissioners, a municipal corporation and political subdivision of the State of Colorado ("Denver Water" or "DW"), and the Southern Nevada Water Authority ("SNWA"), for a Pilot Program for Funding the Creation of Colorado River System Water Through Voluntary Water Conservation and Reductions in Use, as amended ("2014 Funding Agreement"). The signatories to the 2014 Funding Agreement are referred to herein collectively as the "2014 Parties," and the 2014 Parties and the Third-Party Contributor individually as a "Party" and collectively as the "Parties." Pursuant to the 2014 Funding Agreement, "Local Funding Agencies" means CAWCD, MWD, DW, and SNWA. "Local Funding Agency" means either CAWCD, MWD, DW, or SNWA as applicable for a particular agreement.

Third-Party Contributor: Environmental Defense Fund, Inc.

Additional Donor(s): Walton Family Foundation

1. Recitals.

- A. Section 6.3 of the 2014 Funding Agreement originally provided that entities other than the 2014 Parties, such as non-governmental organizations, could provide funding for System Conservation projects under the Pilot Program described in that agreement by providing money through a Local Funding Agency.
- B. Through Amendment No. 3 to the 2014 Funding Agreement, the 2014 Parties amended Section 6.3 to provide that entities other than the 2014 Parties may, under certain conditions, participate in both funding Pilot Program costs and review of System Conservation proposals.
- C. Amended Section 6.3 states that entities not a party to the 2014 Funding Agreement ("Third-Party Contributors") "may, subject to the prior approval of all Parties hereto, participate in funding Pilot Program costs and review of System Conservation proposals by executing a Third-Party Contribution Agreement on the terms and in the form attached hereto as Exhibit A." This Agreement serves as an Exhibit A agreement to Amendment No. 3 to the 2014 Funding Agreement.

Now, therefore, the 2014 Parties and the Third-Party Contributor agree as follows:

- 2. Term. This Agreement will terminate on December 31, 2018, but may be renewed for subsequent one calendar-year terms in accordance with the provisions herein.
- 3. Third-Party Contributions. For the term of calendar year 2018, and for any renewal term, the Third-Party Contributor agrees to provide commitments for funding ("Funding

Commitments”) for Program Costs no less than either: i) the amount of funding provided in that term by the individual Local Funding Agency which is contributing the least amount of funding; or, ii) a lesser amount agreed upon by the 2014 Parties and by the Third-Party Contributor. For the calendar year 2018 term, this Third-Party Contributor amount is \$1.0 million. For purposes of this Agreement, Funding Commitments for the Third-Party Contributor may consist of the aggregate of (i) contributions committed directly by the Third-Party Contributor for Program Costs (“Direct Contributions”) that are available for use during the applicable term (i.e. contributions can be provided prior to the applicable term but must be available for use within the applicable term); and (ii) contributions committed for Program Costs from other parties (“Additional Donors”) if such Additional Donors have provided written confirmation that the Third-Party Contributor may include the Additional Donor contributions in determining the Third-Party Contributor’s Funding Commitments for the purpose of this Agreement. Additional Donors and their contributions will be identified to the 2014 Parties. The 2014 Parties acknowledge that the Third-Party Contributor’s Funding Commitment is contingent upon the Third-Party Contributor’s internal approval for Direct Contributions and upon receipt of funding commitments from one or more Additional Donors, if applicable. Third-Party Contributor must provide evidence of its Funding Commitments for the initial calendar year term no later than ten days after the execution of this Agreement.

3.1 The Parties further acknowledge that, absent approval by the Upper Colorado River Commission (“UCRC”) and amendment of the May 13, 2015 Agreement to Facilitate the System Conservation Pilot Program in the Upper Colorado River Basin, as amended, between the UCRC and the 2014 Parties, the UCRC shall not be bound to the terms of this Agreement.

3.2 For the initial calendar year term and any renewal term, and subject to any internal approval described above, and upon a determination of the amount to be contributed for System Conservation projects, the Third-Party Contributor will provide funding (provided either directly as a Direct Contribution or indirectly as received through an agreement with one or more Additional Donors):

- a. As invoiced by Reclamation for Lower Basin System Conservation projects or,
- b. To the UCRC as invoiced for Upper Basin System Conservation projects, subject to the limitations in Paragraph 3.1 of this Agreement,

with payment due 30 days from the day the invoice was received by the Third-Party Contributor.

#### 4. Review of Proposals.

4.1. The 2014 Parties will select projects pursuant to the 2014 Agreement, as amended, and the 2015 Agreement to Facilitate the System Conservation Pilot Program in the Upper Colorado River Basin between the UCRC and the 2014 Parties, as amended.

- 4.2. Subject to Paragraph 3.1 of this Agreement, the Third-Party Contributor may, at its election, participate in the review of all System Conservation proposals for the applicable term in accordance with Sections 5.5 and 5.6 of the 2014 Funding Agreement, as amended. If having elected to participate, a representative of the Third-Party Contributor and/or a designated alternate, could participate in the review of System Conservation proposals. For the term of calendar year 2018, the Third-Party Contributor has elected i) ( X ) to participate; or ii) ( ) to not participate.
- 4.3. Pursuant to Section 5.6 of the 2014 Funding Agreement, as amended, the Agreement does not preclude any Third-Party Contributor from entering into unrelated contracts with Lower Basin Entitlement Holders or Upper Basin Colorado River Water Users to conserve water in accordance with applicable law or any other program or contract.
- 4.4. A Third-Party Contributor may choose not to fund a particular project. While Third-Party Contributors may participate in the review of System Conservation proposals subject to Paragraph 3.1 of this Agreement, in no event shall the dissent of a Third-Party Contributor alone prevent the execution of a System Conservation Implementation Agreement, as project selection is ultimately subject to the provisions of Section 5.6 of the 2014 Funding Agreement, as amended.
5. Renewal.
  - 5.1. Renewal of this Agreement for any calendar year is subject to the unanimous approval of all of the 2014 Parties and the Third-Party Contributor. If there is unanimous support from the 2014 Parties to renew the agreement, then they will, by December 1, 2018 and by December 1 of any renewal term, provide to Third-Party Contributor written notice of the opportunity to renew. Such notice will set forth the amount of funding, if any, that each of the 2014 Parties will provide for System Conservation projects in the next succeeding calendar year.
  - 5.2. On or before December 31, 2018 for purposes of the first renewal or December 31 of any renewal term, or another date that is mutually agreed to in writing by the Third-Party Contributor and the 2014 Parties, the Third-Party Contributor must provide the 2014 Parties written notice of its Funding Commitment for the first or subsequent renewal term, respectively, and indicate whether it will participate in the review of System Conservation proposals. The notice of Funding Commitment will include the amount of Direct Contributions by the Third-Party Contributor and the identity and the amount of contributions to be provided by one or more Additional Donors, as applicable.
  - 5.3. Without written notice of the intent to renew, this Agreement will automatically expire, on January 1 of the year after the initial calendar year term or January 1 of the year following any renewal term.
6. Return of Funds. Upon the expiration of this Agreement, any unobligated funds contributed by Third-Party Contributor will be returned to Third-Party Contributor within sixty (60) days. If renewed, any unobligated funds of Third-Party Contributor may either be returned to

Third-Party Contributor or applied toward its required contribution for the renewal term, as specified by the invoicing.

7. General Provisions.

7.1. Representations and Warranties.

- a. Each Party has all legal power and authority to enter into this Agreement and to perform its obligations hereunder on the terms set forth in this Agreement, and the execution and delivery hereof by each Party and the performance by each Party of its obligations hereunder shall not violate or constitute an event of default under the terms or provisions of any agreement, document, or instrument to which each of the Parties is a party or by which each Party is bound. Each Party warrants and represents that the individual executing this Agreement on behalf of the Party has the full power and authority to bind the Party he or she represents to the terms of this Agreement. This Agreement constitutes a valid and binding agreement of each Party, enforceable against each Party in accordance with its terms.
- b. Third-Party Contributor acknowledges and agrees that its provision of funding hereunder does not ensure the funding of any particular System Conservation project. No Party hereto makes any representation or warranty as to the effect of any System Conservation project, or the cumulative effect of System Conservation projects, on conservation efforts, lake levels, stream flows, the availability of water, or water quality.

7.2. Miscellaneous. This Agreement shall bind and inure to the benefit of the Parties and their successors and assigns. This Agreement shall be interpreted, governed by, and construed under applicable Federal law. To the extent permissible under the Federal Rules of Civil Procedure and other applicable Federal authority, venue for adjudication of any disputes under this Agreement shall be in an appropriate Federal court. This document contains the entire agreement between the Parties with respect to the subject matter hereof. Any failure to enforce any provision of this Agreement shall not constitute a waiver thereof or of any other provision hereof. This Agreement may not be amended, nor any obligation waived, except by a writing signed by the Parties. No assignment or transfer of this Agreement or any right or interest therein shall be valid until approved in writing by all Parties. This Agreement may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Agreement.

- 7.4. Notices. All notices and requests required or allowed under the terms of this Agreement shall be in writing and shall be mailed first class postage paid to the following entities at the following addresses:

Environmental Defense Fund, Inc.  
257 Park Avenue South, Fl. 17  
New York, NY 10010  
Attn: Maxwell Fine, Attorney

Reclamation:

Regional Director  
Lower Colorado Region  
Attention: LC-1000  
500 Fir Street  
Boulder City, NV 89005

Regional Director  
Upper Colorado Region  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1147

Central Arizona Water Conservation District  
23636 North 7th Street  
Phoenix, AZ 85024-3801  
Attn: General Manager

The Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, CA 90054-0153  
Attn: General Manager

Denver Water  
1600 West 12th Avenue  
Denver, CO 80204-3412  
Attn: CEO/Manager

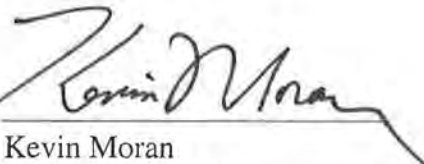
Southern Nevada Water Authority  
1001 South Valley View Boulevard, MS #485  
Las Vegas, NV 89153  
Attn: General Manager

A Party may change its address by giving the other Parties notice of the change in writing.



IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.

Approved as to form:

By:   
Kevin Moran  
Senior Director, Western Water

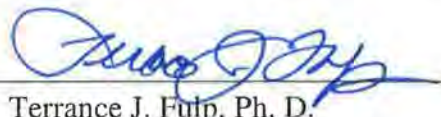
**ENVIRONMENTAL DEFENSE  
FUND, INC.**

By:   
Fred Krupp  
President

Approved as to legal sufficiency:

By: \_\_\_\_\_  
Robert Snow, Esq.  
Attorney-Advisor

**THE UNITED STATES OF AMERICA**

By:   
Terrance J. Fulp, Ph. D.  
Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_  
Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.

Approved as to form:

**ENVIRONMENTAL DEFENSE  
FUND, INC.**

By: \_\_\_\_\_  
Kevin Moran  
Senior Director, Western Water

By: \_\_\_\_\_  
Fred Krupp  
President

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By:  \_\_\_\_\_  
Robert Snow, Esq.  
Attorney-Advisor

By: \_\_\_\_\_  
Terrance J. Fulp, Ph. D.  
Lower Colorado Regional Director  
Bureau of Reclamation

By: \_\_\_\_\_  
Brent Rhees, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.

Approved as to form:

**ENVIRONMENTAL DEFENSE  
FUND, INC.**

By: \_\_\_\_\_  
Kevin Moran  
Senior Director, Western Water


By: \_\_\_\_\_  
Fred Krupp  
President

Approved as to legal sufficiency:

**THE UNITED STATES OF AMERICA**

By: \_\_\_\_\_  
Robert Snow, Esq.  
Attorney-Advisor

By: \_\_\_\_\_  
Terrance J. Fulp, Ph. D.  
Lower Colorado Regional Director  
Bureau of Reclamation

By:  \_\_\_\_\_  
Brent Rhee, P.E.  
Upper Colorado Regional Director  
Bureau of Reclamation



Approved as to form:

By:   
Jay M. Johnson  
General Counsel

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By:   
Theodore C. Cooke  
General Manager

Approved as to form:

By: \_\_\_\_\_  
Marcia L. Scully  
General Counsel

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By: \_\_\_\_\_  
Jeffrey Kightlinger  
General Manager

Approved as to form:

By: \_\_\_\_\_  
Office of General Counsel

**CITY AND COUNTY OF DENVER,  
ACTING BY AND THROUGH ITS  
BOARD OF WATER  
COMMISSIONERS**

By: \_\_\_\_\_  
James S. Lochhead  
CEO/Manager

Approved as to form:

By: \_\_\_\_\_  
Gregory J. Walch  
General Counsel

**SOUTHERN NEVADA WATER  
AUTHORITY**

By: \_\_\_\_\_  
John J. Entsminger  
General Manager

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By: \_\_\_\_\_

Jay M. Johnson  
General Counsel

By: \_\_\_\_\_

Theodore C. Cooke  
General Manager

Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By: \_\_\_\_\_

Marcia L. Scully  
General Counsel

By: \_\_\_\_\_

Jeffrey Kightlinger  
General Manager

Approved as to form:

**CITY AND COUNTY OF DENVER,  
ACTING BY AND THROUGH ITS  
BOARD OF WATER  
COMMISSIONERS**

By: \_\_\_\_\_

Office of General Counsel

By: \_\_\_\_\_

James S. Lochhead  
CEO/Manager

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By: \_\_\_\_\_

Gregory J. Walch  
General Counsel

By: \_\_\_\_\_

John J. Entsminger  
General Manager

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By: \_\_\_\_\_  
Jay M. Johnson  
General Counsel

By: \_\_\_\_\_  
Theodore C. Cooke  
General Manager

Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By: \_\_\_\_\_  
Marcia L. Scully  
General Counsel

By: \_\_\_\_\_  
Jeffrey Kightlinger  
General Manager

Approved as to form:

**CITY AND COUNTY OF DENVER,  
ACTING BY AND THROUGH ITS  
BOARD OF WATER  
COMMISSIONERS**

By: Daniel J. Buntel  
Office of General Counsel

By: James S. Lochhead  
James S. Lochhead  
CEO/Manager

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By: \_\_\_\_\_  
Gregory J. Walch  
General Counsel

By: \_\_\_\_\_  
John J. Entsminger  
General Manager

Approved as to form:

**CENTRAL ARIZONA WATER  
CONSERVATION DISTRICT**

By: \_\_\_\_\_  
Jay M. Johnson  
General Counsel

By: \_\_\_\_\_  
Theodore C. Cooke  
General Manager

Approved as to form:

**THE METROPOLITAN WATER  
DISTRICT OF SOUTHERN  
CALIFORNIA**

By: \_\_\_\_\_  
Marcia L. Scully  
General Counsel

By: \_\_\_\_\_  
Jeffrey Kightlinger  
General Manager

Approved as to form:


**CITY AND COUNTY OF DENVER,  
ACTING BY AND THROUGH ITS  
BOARD OF WATER  
COMMISSIONERS**

By: \_\_\_\_\_  
Office of General Counsel

By: \_\_\_\_\_  
James S. Lochhead  
CEO/Manager

Approved as to form:

**SOUTHERN NEVADA WATER  
AUTHORITY**

By:  \_\_\_\_\_  
Gregory J. Walch  
General Counsel

By:  \_\_\_\_\_  
John J. Entsminger  
General Manager

SCIA No. \_\_\_\_\_

**SYSTEM CONSERVATION IMPLEMENTATION AGREEMENT (SCIA)**  
**BETWEEN THE UNITED STATES BUREAU OF RECLAMATION AND THE**  
**CONTRACTOR TO IMPLEMENT A PILOT SYSTEM**  
**CONSERVATION PROGRAM (PILOT PROGRAM)**

This SCIA to Implement a Pilot Program is entered into this \_\_\_\_ day of \_\_\_\_\_, 201\_, by and between the United States Bureau of Reclamation (“Reclamation”) and the \_\_\_\_\_, hereinafter referred to singularly as “Party” or collectively as “Parties.”

**1. EXPLANATORY RECITALS**

1.1 On July 30, 2014, Reclamation and four municipal entities, the Central Arizona Water Conservation District (CAWCD), The Metropolitan Water District of Southern California (MWD), Denver Water (DW), and the Southern Nevada Water Authority (SNWA) (collectively “Funding Agreement Parties”), entered into Agreement No. 14-XX-30-W0574 for a Pilot Program for funding the creation of Colorado River System water through voluntary water conservation and reductions in use (Funding Agreement).

1.2 On August 12, 2015, and March 8, 2016, the Funding Agreement was amended to allow the Funding Agreement Parties to provide additional funding for the Pilot Program.

1.3 The Pilot Program provides funding to develop short-term pilot projects that keep water in Lakes Powell and Mead through temporary, voluntary, and compensated conservation mechanisms.

1.4 Participation in System Conservation activities as part of the Pilot Program in the Lower Division States is limited to Entitlement Holders.

1.5 The Contractor holds water entitlements of up to \_\_\_\_\_ acre-feet per year under Contract No. \_\_\_\_\_.

1.6 The Contractor submitted to Reclamation a Pilot Program to \_\_\_\_\_.

1.7 The Contractor’s Pilot Program proposal was evaluated independently and collectively by Reclamation, CAWCD, MWD, and DW, and SNWA pursuant to the factors provided in Section 5.5 of the Funding Agreement.

1.8 The Contractor’s Pilot Program proposal was selected by Reclamation, CAWCD, MWD, DW, and SNWA for inclusion in the Pilot Program.

1.9 A copy of the Contractor’s Pilot Program proposal dated \_\_\_\_\_, is attached hereto as Exhibit A and made a part of this SCIA.

1.10 The Contractor desires to augment Colorado River System storage in Lake Mead

by implementing the Pilot Program through this voluntary SCIA in exchange for financial compensation.

1.11 Prior to entering into this voluntary SCIA, as required in Section 5.3 of the Funding Agreement, Reclamation and the participating Funding Agreement Parties are required to enter into a project specific funding agreement providing for, among other things, the timing of the Funding Agreement Parties' contributions, and the project specific performance metrics.

1.12 The project specific funding agreement (Project Funding Agreement No. \_\_\_\_\_) was entered into and a copy is attached hereto as Exhibit B and made part of this SCIA.

NOW, THEREFORE, in consideration of the terms and conditions set forth herein, Reclamation and the Contractor agree as follows:

## 2. DEFINITIONS

2.1 Definitions included in the Funding Agreement are applicable to this SCIA.

2.2 Exhibit A is a copy of the Contractor's Pilot Program proposal dated \_\_\_\_\_. Exhibit A is attached hereto and made a part of this SCIA.

2.3 Exhibit B is a copy of Project Funding Agreement No. \_\_\_\_\_ among Reclamation and the participating Funding Agreement Parties which is a project specific funding agreement providing for, among other things, the amount and timing of the Funding Agreement Parties' contributions, and project specific performance metrics. Exhibit B is attached hereto and made a part of this SCIA.

2.4 System Conservation Water means Colorado River water that is conserved by the Contractor in Lake Mead to benefit the Colorado River System pursuant to this SCIA, by \_\_\_\_\_.

## 3. DESCRIPTION OF THE THE CONTRACTOR'S PILOT PROGRAM PROJECT (PILOT PROJECT)

3.1 The Contractor will not take delivery of \_\_\_\_\_ acre-feet of the Contractor's water entitlement during calendar year 201\_ that otherwise would have been\_\_\_\_\_.

## 4. IMPLEMENTATION

4.1 The 1-year period began January 1, 201\_\_ and ends December 31, 201\_\_.

4.2 The Pilot Project will conserve \_\_\_\_\_ acre-feet of System Conservation Water per year.

4.3 The Contractor will provide Reclamation with an amended water order for calendar year 201\_ to reflect this Pilot Project.

5. MONITORING

5.1 Pursuant to Section 5.3 of the Funding Agreement, Reclamation is required to verify and document reductions in consumptive use of Colorado River water under the Pilot Program.

5.2 By entering into this SCIA, the Contractor grants access to Reclamation, or will provide for such access, to perform periodic on-site inspections of the Pilot Project to verify compliance with this SCIA.

5.3 Reclamation will use its existing water order approval process to ensure that the Contractor's water for this Pilot Project is not ordered by the Contractor.

6. EVALUATION

6.1 The Contractor agrees that Reclamation's annual *Colorado River Accounting and Water Use Report - Arizona, California, and Nevada* (Water Accounting Report) will document the amount of System Conservation Water created by the Contractor.

6.2 Reclamation and the Contractor agree that the System Conservation Water created pursuant to this SCIA shall accrue to the benefit of the Colorado River System and shall not accrue to the individual benefit of any Funding Agreement Party, the Contractor, or any third party.

7. COMPENSATION AND PAYMENTS

7.1 Compensation for System Conservation Water created under this SCIA shall be paid by Reclamation from the amounts contributed by non-Federal Funding Agreement Parties and the funding available from Reclamation for the Pilot Program.

7.2 As required by Section 5.3 of the Funding Agreement, prior to entering into this SCIA, the Funding Agreement Parties entered into Project Funding Agreement No. \_\_\_\_\_, a copy of which is Exhibit B.

7.3 Reclamation will pay the Contractor \$\_\_\_\_\_ per acre-foot for \_\_\_\_\_ acre-feet of its water that it will not take delivery of during calendar year 201\_, in accordance with this SCIA.

7.4 The total Pilot Project cost is \$\_\_\_\_\_. As provided in Project Funding Agreement No. \_\_\_\_\_, Reclamation is contributing \$\_\_\_\_\_ and CAWCD, MWD, DW, and SNWA are each contributing \$\_\_\_\_\_ for a total of \$\_\_\_\_\_.

7.5 The Contractor will be paid \$\_\_\_\_\_ by Reclamation for Colorado River water conserved by the Contractor for calendar year 201\_. As provided by Project Funding Agreement No. \_\_\_\_\_, the payments by Reclamation to the Contractor for Colorado River water conserved by the Contractor will be made as follows:



Calendar Year 201\_ Conservation

Payments	Payment Amounts
Payment 1	\$
Payment 2	\$
Total Payment _	\$

7.8 Payment 1 in the amount of \$\_\_\_\_\_ will be made by Reclamation to the Contractor no later than 60 days following: (i) the execution of this SCIA and (ii) the receipt by Reclamation of the Contractor's amended 201\_ water order.

7.9 Payment 2 in the amount of \$\_\_\_\_\_ will be made by Reclamation to the Contractor no later than 60 days following December 31, 201\_.

## 8. REIMBURSEMENT FOR OVERPAYMENT

8.1 In the event the Contractor fails to create the amount of System Conservation Water as was paid for, in accordance with this SCIA, the Contractor agrees to reimburse for the overpayment within 30 days of receipt of a bill for collection from Reclamation.

## 9. GENERAL TERMS

9.1 The Contractor agrees to remain in compliance with applicable Federal, State, and local environmental, cultural, and paleontological resource protection laws and regulations throughout the term of this SCIA.

9.2 Reclamation shall be responsible to obtain any further consents or forbearances required to ensure that System Conservation Water created by the Contractor remains in the Colorado River System and does not inure to the benefit of any individual Entitlement Holder.

9.3 The System Conservation Water created by the Contractor under this SCIA will not be charged against the Contractor's use of Colorado River water or charged to Arizona's Colorado River apportionment.

9.4 Except as otherwise provided in this SCIA, the Contractor hereby releases and agrees that it will indemnify and hold harmless the United States and its officers, agents, employees, and successors or assigns, from every claim for damages to persons or property, direct or indirect, and of whatever nature, arising by reason of the creation of System Conservation Water under this SCIA. The United States shall be liable only for negligence on the part of its officers and employees in accordance with the Federal Tort Claims Act, as amended.

9.5 None of the provisions of this SCIA shall be considered waived, except when such waiver is given in writing. The failure of a party to this SCIA to insist in any one or more instances upon strict performance of any of the provisions, or to take advantage of any of its rights hereunder shall not be construed as a waiver of any such provisions or that party's relinquishment of any such rights for the future, but such provisions and rights shall continue and remain in full force and effect.



9.6 This SCIA is not intended nor shall it be construed to create any third-party beneficiary rights to enforce the terms of this SCIA in any person or entity that is not a party, other than CAWCD, MWD, DW, and SNWA. CAWCD, MWD, DW, and SNWA are expressly designated as third-party beneficiaries to this SCIA.

9.7 The Parties do not intend that any right or remedy given to a Party on the breach of any provision under this SCIA be exclusive; each such right or remedy is cumulative and in addition to any other remedy provided in this SCIA or otherwise available at law or in equity. If the non-breaching Party fails to exercise or delays in exercising any such right or remedy, the non-breaching party does not thereby waive that right or remedy. In addition, no single or partial exercise of any right, power or privilege precludes any other or further exercise of a right, power or privilege granted by this SCIA or otherwise.

9.8 Each Party to this SCIA represents that the person executing on behalf of such Party has full power and authority to do so, and that his/her signature is legally sufficient to bind the Party on whose behalf he/she is signing.

9.9 This SCIA constitutes a valid and binding SCIA of each Party, enforceable against each Party in accordance with its terms. This SCIA is and will be binding upon and will inure to the benefit of the Parties and, upon dissolution, the legal successors and assigns of their assets and liabilities.

9.10 This SCIA may be supplemented, amended, or modified only by the written agreement of the Parties. No supplement, amendment, or modification will be binding unless it is in writing and signed by the Parties.

9.11 Any notice, demand, or request shall be deemed properly served, given, or made if delivered in person; sent by registered or certified mail, postage prepaid; or overnight delivery, charges prepaid or charged to the sender's account to the persons in the positions executing this SCIA.

9.12 All information and data obtained or developed with the performance of duties mentioned in this SCIA shall be available upon request to a Party, subject to the provisions of the Freedom of Information Act or other applicable law. However, use of said reports, data and information shall appropriately reference the source for the respective documents.

9.13 The expenditure or advance of any money or the performance of any obligation by the United States under this SCIA shall be contingent upon the appropriation or allotment of funds. No monetary liability shall accrue to the United States in case funds are not appropriated or allocated or received from the Funding Agreement Parties as provided in Project Funding Agreement No. \_\_\_\_\_.

9.14 No member of or Delegate to Congress, Resident Commissioner, or official of SNWA shall benefit from this SCIA other than as a water user or landowner in the same manner as other water users or landowners.

9.15 This SCIA is entered into under the Reclamation Act of 1902 as supplemented and amended and, in particular, the Boulder Canyon Project Act (45 Stat. 1057), the Colorado River Basin Salinity Control Act (88 Stat. 266), as amended, and consistent with Section 206 of

Title II of Division D of the Consolidated and Further Continuing Appropriations Act, 2015 (Public Law 113-235) constitutes a pilot project designed to increase Colorado River System water in Lake Mead to address the effects of historic drought conditions. Nothing in this SCIA diminishes or abrogates the authority of the Secretary of the Interior under applicable Federal law, regulations, or the Consolidated Decree of the Supreme Court of the United States in the case of *Arizona v. California, et al.*, entered March 27, 2006, (547 U.S. 150 (2006)), or as it may be further modified.

10. EFFECTIVE DATE

10.1 This SCIA shall become effective upon the date of its execution by both Parties. Once effective, this SCIA will remain in effect until all terms and conditions are satisfied.

10.2 The Parties hereto have executed this SCIA on the day and year first written above.

Approved as to form:

**CONTRACTOR**

By: \_\_\_\_\_

By: \_\_\_\_\_

Approved as to form:

**UNITED STATES OF AMERICA**

By: \_\_\_\_\_

Robert Snow, Esq.  
Attorney-Advisor

By: \_\_\_\_\_

Terrance J. Fulp, Ph.D.  
Regional Director  
Lower Colorado Region  
Bureau of Reclamation

Appendix \_\_\_\_

LC-4405  
WTR-4.00

Project Funding Agreement No. \_\_\_\_\_

Mr. Jeffrey Kightlinger  
General Manager  
The Metropolitan Water District of  
Southern California  
P.O. Box 54153  
Los Angeles, CA 90054-0153

Mr. Jim Lochhead  
CEO/Manager  
Denver Water  
1600 West 12<sup>th</sup> Avenue  
Denver, CO 80204

Mr. Theodore C. Cooke  
General Manager  
Central Arizona Water Conservation District  
23636 North 7<sup>th</sup> Street  
Phoenix, AZ 85024

Mr. John Entsminger  
General Manager  
Southern Nevada Water Authority  
1001 South Valley View Blvd. MS 480  
Las Vegas, NV 89153

Subject: Project Specific Funding Agreement for the Contractors System Conservation Project Consistent With Agreement No. 14-XX-30-W0574, Dated July 30, 2014, as Amended (2014 Funding Agreement), Among the United States, the Central Arizona Water Conservation District (CAWCD), The Metropolitan Water District of Southern California (MWD), City and County of Denver, Acting by and Through its Board of Water Commissioners (DW), and the Southern Nevada Water Authority (SNWA) (Collectively, the Funding Agreement Parties)

Dear Gentlemen:

The Contractor provided a proposal to implement a pilot system water conservation program created by the 2014 Funding Agreement (Pilot Program). The Contractor's proposal was approved to be part of the Pilot Program. The Contractor's proposal is to \_\_\_\_\_.

The Bureau of Reclamation (Reclamation) and the Contractor, pursuant to Sections 4.11 and 5.3 of the 2014 Funding Agreement, will enter into a System Conservation Implementation Agreement (SCIA) relating to the Contractor's proposal upon approval by the Funding Agreement Parties of a project specific funding agreement providing for, among other things, the timing of the Funding Agreement Parties' contributions, and project specific performance metrics. This letter serves as the project specific funding agreement (Project Funding Agreement).

The Funding Agreement Parties agree as follows:

1. Project Costs: The total project cost for water conserved during calendar year \_\_\_\_ is \$\_\_\_\_\_.

2. Contributions – For Water Conserved During Calendar Year \_\_\_\_:

The contributions to be made by the Funding Agreement Parties under this Project Funding Agreement for water conserved by the Contractor during calendar year \_\_\_\_ will be as follows:

Water Conservation

Invoices	Reclamation's Contributions	CAWCD, MWD, DW, and SNWA Contributions			
		CAWCD	MWD	DW	SNWA
Invoice 1	\$	\$	\$	\$	\$
Invoice 2	\$	\$	\$	\$	\$
Total by Entity	\$	\$	\$	\$	\$
Total Amount:	\$				

3. Invoicing:

3.1 Reclamation will invoice CAWCD, MWD, DW, and SNWA for their contributions at least 45 days before payments are to be made by Reclamation to the Contractor under the SCIA entered into between Reclamation and the Contractor.

3.2 Invoices must be paid within 30 days of the date of the invoice.

4. Payments to Reclamation: CAWCD, MWD, DW, and SNWA will submit their contributed shares to Reclamation using the payment options listed on the invoice.

5. Payments to the Contractor: Payments from Reclamation to the Contractor will be made in accordance with the SCIA entered into between Reclamation and the Contractor.

6. Performance Metrics: Project Specific Performance Metrics are set forth in Sections 3, 4, 5, and 6 of the SCIA entered into between Reclamation and the Contractor.

7. Approval of Form of SCIA: Consistent with the goal set forth in Section 5.6 of the 2014 Funding Agreement, the Funding Agreement Parties' execution of this Project Funding Agreement also provides their approval of the form of the SCIA entered into between Reclamation and the Contractor.

8. Effective Date: This Project Funding Agreement will be effective upon the date of execution of the SCIA entered into between Reclamation and the Contractor.

CAWCD, MWD, DW, SNWA agree to the provisions of this Project Funding Agreement and their formal concurrence with this Project Funding Agreement is evidenced by their signatures below, as provided herein. Reclamation's signature on this Project Funding Agreement provides its formal concurrence, subject to the execution of this Project Funding Agreement by CAWCD, MWD, DW, and SNWA. This Project Funding Agreement may be signed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Project Funding Agreement.

If you agree with the terms of this Project Funding Agreement, please sign as indicated below and return it to Reclamation. Reclamation will then forward to each party a fully executed original of the Project Funding Agreement.

If you have questions, please contact Mr. Steven C. Hvinden, Chief, Boulder Canyon Operations Office, at 702-293-8414.

Sincerely,

Terrance J. Fulp, Ph.D.  
Regional Director

In Quintuple

*Signatures continued on next page.*

TEMPLATE

CAWCD:

Approved as to form:

By: \_\_\_\_\_  
Theodore C. Cooke  
Its: General Manager

By: \_\_\_\_\_  
Its:

MWD:

Approved as to form:

By: \_\_\_\_\_  
Jeffrey Kightlinger  
Its: General Manager

By: \_\_\_\_\_  
Marcia L. Scully  
Its: General Counsel

CITY AND COUNTY OF DENVER,  
Acting by and through its BOARD OF  
WATER COMMISSIONERS:

Approved as to form:

By: \_\_\_\_\_  
James S. Lochhead  
Its: CEO/Manager

By: \_\_\_\_\_  
Daniel J. Arnold Esq.  
Its: Office of General Counsel

SNWA:

Approved as to form:

By: \_\_\_\_\_  
John Entsminger  
Its: General Manager

By: \_\_\_\_\_  
Gregory J. Walch, Esq.  
Its: General Counsel

Appendix \_\_\_\_

LC-4405

2.2.4.23

VIA OVERNIGHT MAIL

Letter Agreement No. \_\_\_\_\_

Mr. Theodore C. Cooke  
General Manager  
Central Arizona Water Conservation District  
23636 North 7<sup>th</sup> Street  
Phoenix, AZ 85024

Subject: System Conservation Implementation Agreement (SCIA) Between the United States Bureau of Reclamation (Reclamation) and the Contractor to Implement a Pilot System Conservation Program (Pilot Program)

Dear Mr. Cooke:

On July 30, 2014, Reclamation and the Central Arizona Water Conservation District (CAWCD), The Metropolitan Water District of Southern California, Denver Water, and the Southern Nevada Water Authority (collectively the "Local Funding Agencies"), entered into Agreement No. 14-XX-30-W0574, as amended, for a Pilot Program for funding the creation of Colorado River System water through voluntary water conservation and reductions in use (2014 Funding Agreement). In accordance with Section 7 of the 2014 Funding Agreement, the Local Funding Agencies agree not to request delivery of any of the System Conservation water created pursuant to the Pilot Program.

The 2014 Funding Agreement provides for Reclamation to enter into SCIA's with entitlement holders that provide proposals that are approved by Reclamation and the Local Funding Agencies. The Contractor provided a proposal to implement a pilot system water conservation program under the 2014 Funding Agreement. The Contractor's proposal is to \_\_\_\_\_.

This Letter Agreement No. \_\_\_\_\_ (Letter Agreement) serves as documentation of agreement by CAWCD, as the junior Colorado River water entitlement holder in the state of Arizona, to the following:

CAWCD agrees:

1. To forbear the diversion and delivery of Colorado River water created under the SCIA entered into between Reclamation and the Contractor.
2. To submit an amendment to its Colorado River water order with Reclamation to ensure that the water created under the SCIA entered into between Reclamation and the Contractor remains in Lake Mead. CAWCD will reduce its annual water orders by \_\_\_\_\_ acre-feet over a 2-year period. For 201\_, CAWCD agrees to reduce its water order by \_\_\_\_\_ acre-feet. For 201\_, CAWCD agrees to reduce its water order by \_\_\_\_\_ acre-feet. In the event that CAWCD fails to submit in any year such a water order, CAWCD understands that Reclamation would, for purposes of

water accounting and administration of the Inadvertent Overrun and Payback Policy, deduct the amount of the conserved water from the amount of water available to CAWCD in that year thereby ensuring that the conserved water remains in Lake Mead.

3. That in the event Reclamation, with the consent of the Funding Agreement Parties, renews the SCIA entered into between Reclamation and the Contractor for a second year option, CAWCD agrees that the terms and conditions of this Letter Agreement apply to the second year option without the need to amend this Letter Agreement.

This Letter Agreement is effective upon execution of the SCIA entered into between Reclamation and the Contractor and ends upon the termination of the SCIA by Reclamation. If CAWCD agrees to the terms of this Letter Agreement, please sign below as indicated and return an original Letter Agreement to Reclamation. The duplicate original of the Letter Agreement is for CAWCD's files. We appreciate CAWCD's cooperation with Pilot Program activities. If you have questions, please call Mr. Steven C. Hvinden, Chief, Boulder Canyon Operations Office, at 702-293-8414.

Sincerely,

Terrance J. Fulp, Ph.D.  
Regional Director

In Duplicate

Accepted and agreed to by CAWCD this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

By: \_\_\_\_\_

Its: \_\_\_\_\_

cc: Local Funding Agencies

Ms. Colby Pellegrino  
Colorado River Program Manager  
Southern Nevada Water Authority  
1001 South Valley View Blvd., MS 480  
Las Vegas, NV 89153

Mr. Chuck Cullom  
Colorado River Program Manager  
Central Arizona Water Conservation District  
23636 North 7<sup>th</sup> Street  
Phoenix, AZ 85024

Mr. William Hasencamp  
Manager of Colorado River Resources  
The Metropolitan Water District of  
Southern California  
700 North Alameda Street  
Los Angeles, CA 90012

Ms. Rachel Pence  
Water Resource Engineer  
Denver Water  
1600 West 12<sup>th</sup> Avenue  
Denver, CO 80204



RESOLUTION  
of the  
UPPER COLORADO RIVER COMMISSION  
December 10, 2014

Regarding Development of an Emergency Upper Basin Drought Contingency Plan

WHEREAS, the Upper Colorado River Commission (Commission) was created by the Upper Colorado River Basin Compact (Compact) between the States of Arizona, Colorado, New Mexico, Utah and Wyoming on October 11, 1948, and consented to by Congress by the Act of April 6, 1949 (63 Stat. 31, Chapter 48);

WHEREAS, Article VIII of the Compact empowers the Commission to perform certain functions including, but not limited to:

- i. Engaging in cooperative studies of water supplies of the Colorado River and its tributaries;
- ii. Collecting, analyzing, correlating, preserving and reporting on data as to the stream flows, storage, and diversion of water from the Colorado River and its tributaries;
- iii. Making findings as to the quantity of water of the Upper Colorado River System used each year in the Upper Colorado River Basin and in each Upper Basin State;
- iv. Making findings on the quantity of water deliveries at Lee Ferry during each water year;
- v. Making findings as to the necessity for and the extent of the curtailment of use required, if any; and
- vi. Performing all functions required by the Compact and doing all things necessary, proper and convenient in the performance of its duties either independently or in cooperation with any state or federal agency;

WHEREAS, the Colorado River Storage Project Act (CRSP Act) and the Colorado River Basin Project Act authorized the Secretary of the Interior to construct and operate initial units consisting of Glen Canyon, Flaming Gorge, Curecanti (Aspinall), and Navajo, to, among other things, allow Colorado, New Mexico, Utah and Wyoming (collectively, the "Upper Division states") to utilize their share of the Colorado River and meet their obligations at Lee Ferry under the Colorado River Compact;

WHEREAS, Lake Powell serves as the primary storage facility for the Upper Division states to ensure ongoing compliance with the Colorado River Compact without curtailment of annual consumptive uses in the Upper Basin;

WHEREAS, the period 2000 to 2014 constituted the most severe 15 year drought in the long history of recordkeeping for the Colorado River Basin, leading to marked fluctuations in water elevations and low storage at Lake Powell and contributing to sustained decreases in water elevations and storage at Lake Mead;

WHEREAS, the seven (7) Colorado River Basin states met with the Secretary of the Interior in June 2013 to discuss the status of the Colorado River reservoir system and initiate a process for investigating mitigation actions that might be taken in response to drought;

WHEREAS, the Upper Division states, through the Commission, have been working in parallel with the Lower Division states (Arizona, California, and Nevada) and in conjunction with the Department of the Interior to explore, develop and implement drought contingency options to avoid reaching critical reservoir elevations at either Lake Powell or Lake Mead;

WHEREAS, hydropower generated from Lake Powell provides stability for the Western Power Interconnection and funding for operation and maintenance of the primary CRSP Act units and for environmental and development programs throughout the Upper Basin;

WHEREAS, if water elevations at Lake Powell reach minimum power pool levels, water supply and development for consumptive and non-consumptive uses in the Upper Basin and power supply options for the Western Area Power grid could be compromised; and

WHEREAS, the Commission desires to be prepared to mitigate the adverse effects of severe drought in the event that such extreme conditions continue to persist into the future.

NOW, THEREFORE, BE IT RESOLVED that, considering the recitals outlined above, the Commission intends to work expeditiously in tandem with the Lower Division states and the Department of the Interior to develop an Emergency Upper Basin Drought Contingency Plan for purposes of prudent water management consistent with the Colorado River and Upper Colorado River Basin Compacts;

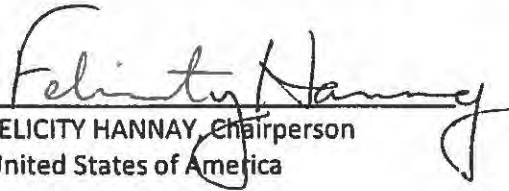
BE IT FURTHER RESOLVED that as part of the Emergency Upper Basin Drought Contingency Planning process, the Commission commits to:


- i. Employ best efforts to expand both the geographical and temporal extent of weather modification programs within the Upper Division states to help boost snow accumulation and system water in the Upper Colorado River Basin. In furtherance of this effort, Colorado, Wyoming and Utah have and will continue working to try to secure additional funds to continue and expand weather modification programs to enhance runoff through weather modification in appropriate areas.
- ii. Develop and finalize a uniform plan to extend and coordinate operations of the initial units authorized under the CRSP Act to:
  - a. Help avoid or mitigate impacts from Lake Powell reaching the critical, minimum power pool elevation;
  - b. Reduce any long-term risk of impairing annual consumptive uses due to compact curtailments in the Upper Basin; and
  - c. Recover storage in the CRSP units as quickly as practicable consistent with the Colorado River and Upper Colorado River Basin Compacts as well as other applicable state and federal laws.

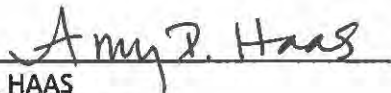
To further this effort, the Commission's engineering and legal committees will continue to work with the Federal Government and interested stakeholders to identify strategies and mechanisms for extending operations at the initial CRSP units in a manner consistent with existing technical understandings and legal constraints ; and

- iii. Explore the feasibility of developing and employing temporary, voluntary, compensated demand management program(s) within the Upper Basin in a manner that helps reduce consumptive uses, if and when needed, to protect against impacts from Lake Powell reaching critical elevations and to help ensure ongoing compliance with the Colorado River Compact without impairing the right to exercise any existing water rights in the future. To inform this investigation, the Commission will, among other things:
- Consider basin wide approaches such as the 2012 Colorado River Basin Supply and Demand Study and its Next Steps Process;
  - Support pilot programs such as those contemplated under the July 30, 2014 System Conservation Agreement; and
  - Support intrastate efforts to explore demand management mechanisms within each of the Upper Division states.

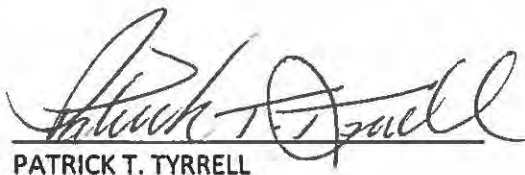
BE IT FURTHER RESOLVED that the Commission hereby directs its staff to work in an expeditious manner with the Upper Division states' respective engineering and legal advisers to finalize each element of the final Emergency Upper Basin Contingency Plan for Commission review and approval before the need for such plan to be implemented arises.

  
FELICITY HANNAY, Chairperson  
United States of America

  
ERIC L. MILLIS  
State of Utah

  
AMY I. HAAS  
State of New Mexico

  
JOHN H. McCLOW  
State of Colorado

  
PATRICK T. TYRRELL  
State of Wyoming



**AGREEMENT  
TO FACILITATE THE SYSTEM CONSERVATION PILOT PROGRAM IN  
THE UPPER COLORADO RIVER BASIN**

This Agreement ("Agreement") is entered into this 13<sup>th</sup> day of May, 2015 ("Effective Date"), by and between the UPPER COLORADO RIVER COMMISSION ("Commission"), an interstate administrative agency established under the Upper Colorado River Basin Compact, the UNITED STATES OF AMERICA ("United States"), represented by the Secretary of the Interior ("Secretary") acting through the officials of the U.S. Bureau of Reclamation executing this Agreement, CITY AND COUNTY OF DENVER, acting by and through its BOARD OF WATER COMMISSIONERS ("DW"), a municipal corporation and political subdivision of the State of Colorado, the CENTRAL ARIZONA WATER CONSERVATION DISTRICT, a multi-county water conservation district duly organized and existing under the laws of the State of Arizona ("CAWCD"), THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA, a regional public water district duly organized under California law ("MWD"), and the SOUTHERN NEVADA WATER AUTHORITY, a political subdivision of the State of Nevada ("SNWA"), each being referred to individually as "Party" or collectively as the "Parties."

**A. RECITALS**

**A.1 Parties.**

**a. Upper Basin Contracting Entity**

- i. Commission – The Commission was created by the Upper Colorado River Basin Compact ("Upper Basin Compact") among the states of Arizona, Colorado, New Mexico, Utah and Wyoming on October 11, 1948, and consented to by the United States Congress by the Act of April 6, 1949 (63 Stat. 31, Chapter 48). Article VIII of the Upper Basin Compact authorizes the Commission to, among other things: i) engage in cooperative studies of water supplies of the Colorado River and its tributaries; ii) collect, analyze, correlate, preserve and report on data as to the stream flows, storage, and diversion of water from the Colorado River and its tributaries; iii) make findings as to the quantity of water of the Upper Colorado River System used each year in the Upper Colorado River Basin and in each Upper Basin State; iv) make findings on the quantity of water deliveries at Lee Ferry during each water year; v) make findings as to the necessity for and the extent of the curtailment of use required, if any, in the Upper Colorado River Basin ("Upper Basin"); and vi) perform all functions required by the Compact and do all things necessary, proper and convenient in the

performance of its duties either independently or in cooperation with any state or federal agency.

Relying on these authorizations, and pursuant to Article X.2 of the Commission By-Laws, the Commission Chairperson and Commission Secretary (a/k/a Executive Director), acting upon approval of the Commission, are required and have the authority to execute any contracts or other instruments in writing to be signed for and on behalf of the Commission to do and perform all things necessary and expedient to carry out the purposes of the Commission.

b. System Conservation Partners

- i. DW is a municipal corporation and political subdivision of the State of Colorado invested by Article XX of the Colorado Constitution with the power to operate works “within or without its territorial limits.” Pursuant to its authority under the State Constitution and its Charter, DW is authorized to and may exercise all the powers of the City and County of Denver in regard to maintaining, conducting and operating a water works system and plant for all uses and purposes. In furtherance of these powers, DW is authorized to make and execute contracts, take and give instruments of conveyance, and do all other things necessary or incidental to its powers.
- ii. SNWA is a Nevada joint powers agency and political subdivision of the State of Nevada created by agreement dated July 25, 1991, as amended November 17, 1994, and January 1, 1996, pursuant to NRS Chapter 277 to, among other things, contract for Colorado River water, develop and implement projects to acquire, develop, treat, and transport water to its purveyor members, acquire and dispose of water supplies, and to execute contracts as necessary in furtherance of these powers.
- iii. CAWCD is a multi-county water conservation district duly organized and existing under the laws of the State of Arizona pursuant to ARS Title 48, Chapter 22. CAWCD is authorized to, among other things, contract for and deliver Colorado River water, and to execute contracts as necessary for the furtherance of these authorities.
- iv. MWD is a regional public water district duly organized under California law. MWD is authorized by Section 25 of the Metropolitan Water District Act to develop, store, and distribute water for domestic and municipal purposes.
- v. United States is referred to in parts of this Agreement as the Federal System Conservation Partner, and is represented by the Secretary acting through the officials from the Bureau of

Reclamation (“Reclamation”) executing this Agreement. Under federal statutory authority pursuant to the Reclamation Act of 1902, as amended and supplemented, Reclamation, on behalf of the Secretary of the Interior is authorized to construct, operate, and maintain a number of facilities on the Colorado River, including the initial units of the Colorado River Storage Project, consisting of dams, reservoirs, power plants, transmission facilities and appurtenant works.

A.2 Background/Purpose.

- a. The Secretary, through Reclamation, has constructed and now operates and maintains Lakes Powell and Mead to serve as the primary storage facilities in the Upper Basin and Lower Basin, respectively. These reservoirs are operated conjunctively to, among other things, provide for storage and delivery of water for beneficial uses pursuant to the applicable provisions of federal law including the Colorado River Compact, Boulder Canyon Project Act, 1944 Water Treaty with Mexico, Upper Basin Compact, Colorado River Storage Project Act, *Arizona v. California* Consolidated Decree and Colorado River Basin Project Act.
- b. The Colorado River and its tributaries serve as the primary water supply for approximately 40 million people in the United States and Mexico, irrigate approximately 5.5 million acres of land, provide over 4,200 megawatts of hydroelectric generating capacity, function as the lifeblood for at least 22 Native American tribal communities, and sustain environmental resources throughout the almost 250,000 square mile basin.
- c. As of May 1, 2015, Lake Powell storage is at 45% of capacity and Lake Mead storage is at 38%. The period 2000 through 2015 has constituted the most severe 16-year drought in the long history of recordkeeping for the Colorado River basin, leading to significant fluctuations in water elevations and low storage at Lake Powell and contributing to decreases in water elevations and storage at Lake Mead.
- d. Colorado River System modeling projections show a potential for water elevations at Lake Powell and Lake Mead to reach critically low levels in the coming months and years that could trigger reductions in water deliveries and/or interrupt the benefit of hydroelectric power generation for certain hydropower users.



- e. Colorado, Utah, Wyoming and New Mexico (“Upper Division States”), through the Commission, have been working in parallel with Arizona, California and Nevada (“Lower Division States”) and water user entities within the Colorado River Basin, and in conjunction with the Department of the Interior, through Reclamation, to develop and implement drought contingency options, as appropriate, to avoid or reduce the likelihood of reaching critical reservoir elevations at either Lake Powell or Lake Mead.
- f. Four municipal water suppliers (DW, CAWCD, MWD, and SNWA) entered into an agreement with Reclamation (collectively the “System Conservation Partners”) on July 30, 2014 to fund a 2-year pilot program to test creation of Colorado River System water through voluntary water conservation and reductions in use (“System Conservation Agreement”).
- g. Pursuant to the System Conservation Agreement, Reclamation agreed to commit up to \$3 million, and DW, CAWCD, MWD, and SNWA (Non-Federal System Conservation Partners) agreed to commit up to \$2 million each over a 2-year period to determine whether System Conservation is a sufficiently cost effective, robust and feasible method to partially mitigate the impacts of salinity and ongoing drought on the Colorado River System by managing water levels in Lakes Mead and Powell above critically low elevations, with the ancillary benefit of enhancing flows in areas upstream of storage reservoirs (“Pilot Program”).
- h. The System Conservation Agreement contemplates a portion of the funding for the Pilot Program will be used for projects in the Upper Basin to allow for a better understanding of whether and how voluntary reductions in consumptive use in the Upper Basin could help protect critical reservoir levels during extended drought.
- i. Pilot Projects funded pursuant to the System Conservation Agreement in the Upper Basin are intended to, among other things, help explore, learn from and determine if a voluntary, compensated reduction in Consumptive Use is a feasible method to partially mitigate the decline of, or to raise, water levels in Lake Powell and should, thereby, serve as a useful tool for the contingency planning processes in the Upper Basin.
- j. The System Conservation Agreement contemplates facilitating the Pilot Program in the Upper Basin through an entity with the authority to enter into and administer system conservation implementation

agreements with water users in the Upper Basin ("Upper Basin Contracting Entity").

- k. The Commission passed a formal resolution on December 10, 2014 finding the Pilot Program had the potential to provide useful information and experience that could inform the Upper Basin drought contingency planning process.
- l. The Parties recognize that with the consent of the Upper Division States and the United States, through their respectively appointed Upper Colorado River Commissioners, the Commission can best coordinate and facilitate the rights and obligations of the signatories to the Upper Basin Compact, and that to ensure the greatest opportunity for success, development and implementation of the Pilot Program in the Upper Basin, the Commission should serve as the Upper Basin Contracting Entity for the Pilot Program in the Upper Basin.

### A.3 Intent.

Through this Agreement, the Parties intend to set forth the roles, obligations and expectations of the Commission serving as the Upper Basin Contracting Entity and the System Conservation Partners serving as funders for the Pilot Program as it is to be implemented in the Upper Basin consistent with the System Conservation Agreement and the rights, authorities and obligations of the Commission. The Parties do not intend through this Agreement to create any future rights or obligations or set forth any precedent regarding management, operation or administration of the Colorado River System beyond the scope of the Pilot Program.

## B. DEFINITIONS

The following definitions shall apply for purposes of this Agreement and this Agreement only. No definition set forth herein shall be construed as evidence or an indicator of any Party's interpretation or intent as it relates to similar terms that may exist in other laws, rules, regulations, agreements, or other relevant documents that may involve, implicate or otherwise affect the Parties.

1. Act means the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235).
2. Colorado River Basin States means the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming.
3. Colorado River Compact means the document signed on November 24, 1922, at Santa Fe, New Mexico, pursuant to an act of Congress approved



August 19, 1921 (42 Stat. 171). The Colorado River Compact was approved in Section 13(a) of the Boulder Canyon Project Act.

4. Colorado River System shall have the meaning ascribed to such term in the Colorado River Compact.
5. Commission means the Upper Colorado River Commission created by the Upper Basin Compact.
6. Commission Chairperson refers to the Upper Colorado River Commissioner representing the United States of America who serves as chair of the Commission pursuant to the Commission's By-Laws.
7. Commission Secretary refers to the Secretary of the Commission as identified in the Upper Basin Compact and selected by the Commission pursuant to the Commission's By-Laws. The Commission Secretary is also referred to as the Executive Director.
8. Consolidated Decree means the decree entered by the United States Supreme Court in the matter of *Arizona v. California* on March 27, 2006 (547 U.S. 150).
9. Consumptive Use means diversions from the Colorado River System, less any return flow to the river system that is available for Consumptive Use in the Upper Basin. Examples of Consumptive Use in the Upper Basin include withdrawal of water from its source because it has evaporated, been transpired by plants, incorporated into products or crops, consumed by people or livestock or otherwise removed from the immediate water environment.
10. Federal System Conservation Partner refers to the Secretary of the Interior ("Secretary") acting through the officials of the U.S. Bureau of Reclamation that agreed to fund the Pilot Program pursuant to the System Conservation Agreement.
11. Governor's Representative means any one of the Upper Colorado River Commissioners representing his or her state on the Commission.
12. Lower Basin means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters

diverted from the System below Lee Ferry, as defined in the Colorado River Compact

13. Lower Division States means Arizona, California, and Nevada, as defined in the Colorado River Compact.
14. Monitoring means the efforts taken to evaluate the results of the Pilot Program, including but not necessarily limited to identifying or estimating the volume of System Conservation achieved by approved projects and estimating the system benefit, if any, of the water conserved in the Upper Basin.
15. Non-Federal System Conservation Partner means CAWCD, MWD, DW, or SNWA, each of which agreed to fund the Pilot Program pursuant to the System Conservation Agreement.
16. Pilot Program means the program identified and funded through the System Conservation Agreement to determine whether System Conservation could be a feasible method to help mitigate the impacts of salinity and ongoing drought on the Colorado River System. The Pilot Program, as referenced herein, refers to the execution and implementation of System Conservation activities within the Upper Basin consistent with the System Conservation Agreement and further clarified by this Agreement.
17. Pilot Program Funds means funds provided by the System Conservation Partners to finance System Conservation projects as part of the Pilot Program consistent with the System Conservation Agreement, the terms of this Agreement, and according to the schedules and terms of System Conservation Implementation Agreements as executed in the Upper Basin.
18. Pilot Program Funding Account means a bank account deemed suitable by the Non-Federal System Conservation Partners and the Commission that is capable of accepting, maintaining and releasing Pilot Program Funds from the Non-Federal System Conservation Partners according to the terms of this Agreement and any applicable System Conservation Implementation Agreement.
19. Project Proponent means a water user from the Upper Basin who applies to participate in the Pilot Program pursuant to the terms of this Agreement.

20. Reclamation means the United States Bureau of Reclamation, a United States Department of the Interior agency.
21. Secretary means the Secretary of the United States Department of the Interior.
22. System Conservation means a voluntary and measurable or estimable reduction of Consumptive Use of Colorado River water, including the elimination of system losses or reduction in demands through increased efficiency by an Upper Basin Water User through the Pilot Program for the sole purpose of benefitting the Colorado River System and learning whether such reductions can have a mitigating effect on declining storage levels in the Colorado River reservoirs. System Conservation does not include: (i) measures implemented by an Upper Basin Water User to meet Consumptive Use reduction obligations under any transfer, acquisition, or conservation agreement with another party, (ii) implemented for monetary payment or other valuable consideration from any third party not a signatory to this Agreement, or (iii) efforts that are voluntarily, administratively or judicially ordered to be undertaken by an Upper Basin Water User for purposes other than System Conservation.
23. System Conservation Agreement means the agreement among the System Conservation Partners for a Pilot Program for Funding the Creation of Colorado River System Water through Voluntary Water Conservation and Reductions in Use executed July 30, 2014, as Reclamation Agreement No. 14-XX-30-W0574.
24. System Conservation Implementation Agreement means an agreement to implement System Conservation entered into between the Commission and the Project Proponent following approval of a proposal for participating in the Pilot Program consistent with the terms of this Agreement.
25. System Conservation Partners means the signatories to the System Conservation Agreement, including DW, CAWCD, MWD, SNWA and the United States.
26. Upper Basin means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System above Lee Ferry, as defined in the Colorado River Compact.

27. Upper Basin Compact means the Upper Colorado River Basin Compact regarding the Colorado River System signed by the states of Arizona, Colorado, New Mexico, Utah and Wyoming on October 11, 1948, and consented to by an act of Congress April 6, 1949 (63 Stat. 31, Chapter 48).
28. Upper Basin Contracting Entity is defined in the System Conservation Agreement and has been further clarified under this Agreement to mean the Commission.
29. Upper Basin Water Users means a person or entity within an Upper Division State that has an existing authorization under applicable state law to divert Colorado River System water as reasonably required for beneficial uses.
30. Upper Colorado River Commissioners means those Commissioners appointed to the Commission pursuant to the Upper Basin Compact.
31. Upper Division States means the states of Colorado, New Mexico, Utah, and Wyoming, as defined in the Colorado River Compact.
32. Verification means the efforts taken to confirm that the action(s) proposed by the Project Proponent and agreed to under a System Conservation Implementation Agreement to accomplish the contemplated System Conservation have been taken.

## **C. STATEMENT OF WORK AND RESPONSIBILITIES**

### **C.1 Proposal Phase.**

To implement the Pilot Program in the Upper Basin, the Parties intend to seek, review and approve proposals from Upper Basin Water Users consistently with the terms of the System Conservation Agreement, authorities granted the Commission, and laws of the Upper Division State in which a project may be proposed and considered for approval.

- a. Good Faith Efforts - Each Party agrees to employ good faith efforts in the proposal review, evaluation and selection process.
- b. Request for Proposal – Upon the Parties' consent, the Commission will develop and issue Request for Proposals ("RFPs") for 2015 from Upper Basin Water Users in consultation with the System Conservation Partners and Upper Division States. The Parties will agree to the framework and content of such RFPs, recognizing that different



formats may be developed to better fit within the laws and Water User preferences of the Upper Division States within which the RFPs will be distributed. Furthermore, the Commission will coordinate with the Upper Division States and the System Conservation Partners to perform useful outreach within the Upper Basin, and thereby help accomplish the best distribution of the Upper Basin RFPs possible.

- c. **Proposal Review** – For 2015, the Commission will collect the Upper Basin proposals submitted for consideration in the Pilot Program, and, in consultation with the Upper Division States, perform an initial review to evaluate proposals based on criteria set forth in the System Conservation Agreement and any additional considerations developed by the Commission that reflect Upper Basin perspectives regarding compact considerations, administration, policies and planning. Within 10 days of receiving all proposal(s), the Commission will provide the proposal(s) to the System Conservation Partners, and, to the extent time permits, summaries of the Commission's initial evaluations, prior to the Parties meeting to review and evaluate the Upper Basin proposals for inclusion in the Pilot Program.
- d. **Proposal Approval** – The Parties, or their designee(s), will meet promptly after the proposal review described in Section C.1.c above to discuss and jointly select the Upper Basin proposals, if any, to be included in the Pilot Program for 2015. Approval of an Upper Basin proposal for inclusion in the Pilot Program shall, in addition to approvals required by System Conservation Partners and the consequent funding apportionment set forth in the System Conservation Agreement, require the consent of the Commission and the Governor's Representative for the state in which the proposal is to be implemented.
- e. **Approval Documentation** – The Parties agree to document in writing the terms and conditions of their approvals for each project to be included in the Pilot Program. The Commission will maintain this approval documentation as part of its Pilot Program Facilitation duties.
- f. Should the Parties agree that a second proposal phase, separate from the initial round described in Sections C.1.b-d above, is appropriate, then the Parties will agree on timelines for initiating and conducting the second phase of RFPs, proposal review and proposal approval and perform the second phase according to the process and procedures set forth herein.

- g. Additional or alternative provisions may be adopted and generally applied to the proposal development, review and/or approval if unanimously agreed to by each Party in writing during the course of this Agreement. Moreover, the Commission and those System Conservation Partners that have agreed to fund a specific project may also adopt additional or alternative procedures to further the approval and implementation processes for a selected project. Such additions or alterations will only require the approval of the participating Parties and not the unanimous approval of all Parties.

## C.2 Implementation Phase.

To implement the Pilot Program in the Upper Basin, the Commission will contract for, verify and monitor implementation of the selected projects according to the provisions set forth below.

- a. System Conservation Implementation Agreements –
  - i. Following the Parties' approval of Upper Basin Water User proposals to include in the Pilot Program pursuant to C.1.d, the Commission will prepare a draft System Conservation Implementation Agreement ("SCIA") for each proposal selected and distribute the draft as follows:
    - a. First, to the System Conservation Partners for review and concurrence that the provisions reflect the basis for agreement on inclusion of the proposed project in the Pilot Program; and
    - b. Second, upon the Parties' consensus regarding the drafts, to the Project Proponent for review and agreement of terms and conditions.
  - ii. After the draft SCIA has been circulated to both the System Conservation Partners and the Project Proponent, and to the extent the System Conservation Partners, Project Proponent, or Commission requires edits or adjustment to the draft SCIA upon additional review, the Commission, or its designee(s), will circulate any suggested changes to the System Conservation Partners and Project Proponent to facilitate consensus on the final SCIA.
  - iii. Upon obtaining the Commission's, System Conservation Partners' and Project Proponent's consent to finalize the SCIA, the Commission will finalize and execute the SCIA with the Project Proponent.
  - iv. In the event consensus on the terms of a SCIA cannot be reached, approval for the project's inclusion in the Pilot Program will be deemed retracted.

- b. Verification of Selected Project(s) –
  - i. Recognizing that an important aspect of the Pilot Program is Verification that a selected project is implemented consistently with the terms of the Parties' project approval, the Parties agree that funds made available pursuant to the System Conservation Agreement can be used to pay for Verification efforts if agreed to by the Commission and the System Conservation Partner(s) who agree to fund the project.
  - ii. To inform whether funds for Verification efforts can be provided, the Parties agree that proposals by Project Proponents shall include, to the extent possible, a plan that outlines, at a minimum, the preferred methods and costs associated with verifying implementation of the proposed project.
  - iii. If a Project Proponent is unable to reasonably identify methods and costs associated with Verification, the Parties may identify, as a condition precedent to project approval, a Verification plan to be incorporated as part of the approved project and the funds to be made available, if any, to ensure the approved project is implemented according to the terms approved by the Parties.
  - iv. The Parties shall include as part of project approval, the terms for Verification, and funds to be applied toward Verification. These terms and funding provisions should be incorporated into the SCIA.
- c. Contract Administration and Enforcement –
  - i. Administration – The Parties acknowledge the Commission will serve as administrator of the SCIA as executed in the Upper Basin for both the System Conservation Partners and the Project Proponent. However, the Commission is not required or obligated to file, pursue, defend or otherwise be involved in any lawsuit, arbitration or other legal proceeding to enforce any SCIA on behalf of the System Conservation Partners against the Project Proponent or on behalf of the Project Proponent against the System Conservation Partners.
  - ii. Third Party Status – The System Conservation Partners shall be expressly included as intended third-party beneficiaries to any SCIA executed in the Upper Basin as part of the Pilot Program, thereby enabling the System Conservation Partners to enforce the terms of and receive the benefits intended under the SCIA.
  - iii. Indemnification – To the extent permitted by law, each Non-Federal System Conservation Partner agrees to indemnify, defend and hold harmless the Commission and Commission's

agents and employees from and against all liability, claims, losses, damages, costs and expenses of any nature or kind, including, but not limited to, attorneys' fees and all litigation related expenses arising out of or resulting from any failure to make available those funds that such Non-Federal System Conservation Partner agreed to provide as part of the approval of a proposed project and final SCIA for project implementations in the Upper Basin.

- iv. Jurisdiction/Venue – The SCIA shall be interpreted, governed by and construed under applicable Federal law. Where Federal law is silent or where Federal law does not conflict, the laws of the state in which the approved project is implemented shall apply. Moreover, to the extent permissible under the Federal Rules of Civil Procedure and other applicable Federal authority, venue for adjudication of any disputes under the SCIA shall be in an appropriate Federal court within the 10th Circuit.

### C.3 Monitoring Phase.

- a. The Parties acknowledge that Monitoring the results of each approved project and the implementation of the overall Pilot Program in the Upper Basin is important to understanding and learning whether, and to what extent, voluntary, compensated reductions of Consumptive Use in the Upper Basin can benefit the Colorado River System.
- b. The Parties further recognize that additional funds and resources, beyond those contemplated under the System Conservation Agreement, may be necessary to provide for extensive Monitoring of the Pilot Program.
- c. The Commission agrees to explore mechanisms and opportunities available in each Upper Division State for Monitoring or estimating the System Conservation achieved by approved projects, and the system benefits, if any, of the conserved water in the Upper Basin.
- d. Regardless of funding matters, the Parties understand that Monitoring methods may have to be tailored for different projects based on the ability to directly measure or estimate the achieved System Conservation. For example, Monitoring of the System Conservation achieved for irrigation projects may, in some instances, have to be evaluated based on estimated crop consumptive use, taking into account diversion limitations due to physical or legal water availability and other limitations associated with estimating return flows. Whereas, Monitoring for potential municipal conservation projects could be markedly different.

### C.4 Reporting Phase.



- a. In the event additional funding is secured to provide for administration of the Pilot Program, the Commission agrees to prepare a report, in consultation and, to the extent the Commission deems appropriate, in coordination with reporting efforts of the System Conservation Partners, upon completion of the Pilot Program that identifies lessons learned as a result of Pilot Program implementation in the Upper Basin.
- b. In the absence of additional funding, the Parties agree to consult upon completion of the Pilot Program to discuss and identify relevant information and lessons learned from implementation of the Pilot Program in the Upper Basin.

**C.5 Re-consultation Phase.**

- a. The Parties agree to reconvene in September 2015 to review progress of the Pilot Program and assess whether modifications or alterations to this Agreement should be made to streamline continued implementation, administration and funding for 2016. Any alteration or modification to this Agreement can only be made upon the unanimous written approval of each signatory.
- b. If no modifications are approved, and the Agreement is not terminated, the Parties will identify an appropriate timeline and follow the procedures and processes described in this Section C for soliciting, reviewing, and approving proposals, implementing approved projects, and Monitoring results as part of the Pilot Program for 2016.

**D. PILOT PROGRAM FUNDING MANAGEMENT**

**D.1 Pilot Program Funding – Participation.**

- a. The System Conservation Partners agree to fund the Pilot Program as implemented in the Upper Basin (“Pilot Program Funds”), consistent with the System Conservation Agreement, the terms of this Agreement and according to the schedules and terms of SCIA as executed in the Upper Basin.
- b. Consistent with the System Conservation Agreement, no System Conservation Partner shall be compelled to fund any part of a conservation project simply by virtue of this Agreement. Rather, the System Conservation Partners agree to identify for the Commission as part of the approval process set forth in Section C.1.d, *supra* and consistent with Section D.3.a, *infra*, which System Conservation

Partners will provide funding for each project, and the amounts of funding to be provided by the identified Partner(s) for each project approved for implementation in the Upper Basin. A System Conservation Partner shall only be responsible for its agreed upon portion of any funding for a project, and shall not be responsible for any other System Conservation Partner's portion.

- c. The Commission agrees to facilitate payment of Pilot Program Funds to Project Proponents consistent with Article VIII of the Upper Basin Compact, Commission By-Laws, the terms of this Agreement, and according to the schedules and terms of SCIA's as executed for each project in the Upper Basin.

## D.2 Transfer and Disbursement of Pilot Program Funds.

- a. Consistent with Section D.1.b of this Agreement, the System Conservation Partners will identify for the Commission the funding entity(ies) and the amounts that each funding entity will provide for each project, including any funds for approved project Verification.
- b. Federal System Conservation Partner –
  - i. Grant – Following execution of this Agreement, the Commission and Reclamation will coordinate to transfer funds via grant(s) consistent with Title II, Section 206 of the *Consolidated and Further Continuing Appropriations Act, 2015* (Pub. L. 113-235) (“Act”) and applicable federal law to provide funding for Pilot Project administration as well as potentially for projects selected for inclusion in the Pilot Program and approved by Reclamation to receive funds consistent with the terms and understanding of Reclamation's role in the System Conservation Agreement, which was approved and in existence prior to the date of enactment of the Act.
  - ii. Distribution of Federal Funds –
    - a. Following the transfer of funds consistent with Section D.2.b.i of this Agreement, and if Reclamation has been identified as a funding entity for an approved project as identified in Section D.1.b and D.2.a, *supra*, and consistent with the terms of any such grant, the Commission will authorize distribution of Reclamation's proportion of funding for the approved project consistent with the payment schedule set forth in the relevant SCIA.
    - b. Distribution of any federal funds for the approved project under this Agreement shall be subject to there being sufficient money granted consistent with the Act and

applicable federal law to implement Reclamation's rights and obligations under the System Conservation Agreement as it relates to funding projects selected in the Upper Basin for inclusion in the Pilot Program.

- iii. Reimbursement of Federal Funds – At the conclusion of the Pilot Program, the Commission will direct any funds transferred via grant consistent with the Act but not expended as part of the Pilot Program to be returned or redirected according to Reclamation's instructions. The Parties recognize that funds to be reimbursed or redirected as set forth in this provision will be equal to the funding granted by the Federal Funding Partner, minus any funding expended, and may also include deductions from the reimbursement total for any fees associated with maintaining the Pilot Program Funding Account and any other administrative costs incurred that have been previously agreed to by the Commission and the Federal System Conservation Partner.
- c. Non-Federal System Conservation Partners –
  - i. Pilot Program Funding Account – Following execution of this Agreement, the Commission and Non-Federal System Conservation Partners agree to identify and establish a suitable funding account capable of accepting and releasing Pilot Program Funds provided by the Non-Federal System Conservation Partners according to the terms of this Agreement and any applicable SCIA ("Pilot Program Funding Account").
  - ii. Initial Transfer – After the Pilot Program Funding Account has been established, but before or concurrently with the execution of a final, agreed upon SCIA, the Non-Federal System Conservation Partners as identified in Section D.1.b and D.2.a of this Agreement will initiate measures to transfer initial payments to be disbursed for the approved project(s) consistent with applicable instructions and the payment schedule set forth in the relevant SCIA.
  - iii. Subsequent Transfers – The Commission will invoice the appropriate Non-Federal System Conservation Partners for subsequent payments to be disbursed to Project Proponents in a timeframe that allows the Commission to remain consistent with the payment schedule for each Upper Basin SCIA.
  - iv. Timing – The Non-Federal System Conservation Partners will have a maximum of 30 days from invoice receipt to transfer funds.
  - v. Disbursements –
    - a. The Commission will distribute payments from the Pilot Program Funding Account to:

1. Each Project Proponent according to the payment schedule and terms provided in the relevant SCIA for the Upper Basin; and
  2. The entity, person or contractor tasked with performing Verification activities if agreed to by the Parties as part of their approval for including the project in the Pilot Program and in a manner that is consistent with the schedule and terms in the relevant SCIA.
- b. The Non-Federal System Conservation Partners agree that distribution of funds to Project Proponents shall be subject to there being sufficient funds in the Pilot Program Funding Account.
- vi. Reimbursement of Funds to Non-Federal System Conservation Partners – At the conclusion of the Pilot Program, the Commission will return or redirect Pilot Program Funds that were not expended as part of the Pilot Program to each of the Non-Federal System Conservation Partner(s) who provided the funding originally according to instructions agreed to by the Commission and the relevant Non-Federal System Conservation Partner(s). Unless otherwise jointly instructed by the Non-Federal System Conservation Partner(s), the Parties agree that funds to be reimbursed or redirected as set forth in this provision will be equal to the funding provided by each Non-Federal System Conservation Partner minus funding expended, and may include any proportionate share of interest, minus any fees associated with maintaining the account and any proportionate share of other administrative costs incurred by the Commission that have been previously agreed to by the Parties.
- d. General Assurance – The Commission will not transfer or reassign funds provided under this Agreement to projects or activities not approved pursuant to Sections B or C, *supra*.

D.3 Administration of Funds.

- a. The Commission or its designated agent(s) shall keep full and complete records of Pilot Program Funds and expenditures made pursuant to this Agreement according to generally accepted accounting standards. These records shall be available for inspection, audit and reproduction by the System Conservation Partners during normal business hours. At the end of the Pilot Program, the Commission shall provide an itemized statement to the System Conservation Partners documenting how the Pilot Program Funds were spent and any credits that are available for reimbursement if Program Funds exceed expenditures made.



- b. Notwithstanding any fees associated with maintaining the Pilot Program Funding Account or funds granted by Reclamation, Pilot Program Funds will not be used for administrative costs associated with facilitating or implementing the Pilot Program in the Upper Basin, and will not be used to reimburse the Commission or other entity which is tasked with implementing any or all parts of the Pilot Program in the Upper Basin unless previously agreed to by all Parties.
- c. The Parties agree to collaborate to identify separate funding sources as needed to provide compensation for administrative, Monitoring and Verification costs associated with implementing the Pilot Program in the Upper Basin.

## **E. WARRANTIES**

### **E.1 Authority.**

Each Party represents and warrants that it possesses the legal authority to enter into this Agreement and that it has taken all prerequisite actions required by its respective procedures, by-laws, and applicable laws and regulations to perform the obligations and exercise the rights contemplated herein; furthermore, each Party acknowledges that such warranty and representation as contained in this Section E.1 is a material inducement to, and has been relied upon by the other Parties in entering into this Agreement.

### **E.2 Conservation Goal not Requirement.**

The Parties recognize that implementing the Pilot Program in the Upper Basin will provide valuable information concerning obstacles, complications and pathways forward for developing drought management tools in each of the Upper Division States. Such information will be useful regardless of whether the Pilot Program produces conserved water in quantities that result in measurable increased stream flow benefitting the Colorado River System. The Parties, therefore, agree that no Party shall be liable, if despite good faith efforts, expenditure of Pilot Program Funds does not produce measurable yields of conserved water at Lake Powell or elsewhere.

**E.3 Conflict of Interest.** Each Party, its directors, officers, agents, employees and authorized volunteers warrant to the best of their knowledge that no conflicts of interest exist as a result of entering into this Agreement. Moreover, the Parties agree to waive any incidental conflict of interest that may arise as a result of or in relation to the Parties entering this Agreement.

### **E.4 Parties Held Harmless.**

No Party, its directors, officers, agents, employees or authorized volunteers shall be responsible for any damage or liability occurring by reason of an act or omission of

any other Party in connection with any work, obligation, authority, or any criteria arising out of this Agreement.

## **F. NOTICE AND REPRESENTATIVES**

### **F.1 Notice.**

All notices required to be given hereunder shall be hand delivered or sent by mail to such Party's principal representative at the address set forth below. In addition to paper-copy notice, notice also may be sent by e-mail message to the e-mail address, if any, set forth below. Any Party from time to time may by written notice substitute addresses or persons to whom such notices shall be sent. Unless otherwise provided herein, all notices shall be effective upon receipt.

### **F.2 Representatives.**

The individuals listed below are the principal representatives of the respective Parties. Any Party may from time to time designate in writing new or substitute representatives or addresses. Until changed by notice in writing, all notices and communications shall be addressed as follows:

**Commission:**

Don A. Ostler, Executive Director  
Upper Colorado River Commission  
355 South 400 East  
Salt Lake City, UT 84111  
dostler@ucrcommission.com

**DW:**

Mr. James S. Lochhead, Manager/CEO  
Denver Water  
1600 W. 12th Avenue  
Denver, CO 80204  
jim.lochhead@denverwater.org

**SNWA:**

Mr. John Entsminger, General Manager  
Southern Nevada Water Authority  
1001 South Valley View Boulevard  
Las Vegas, NV 89153  
john.entsminger@SNWA.com

**MWD:**

Mr. Jeffrey Kightlinger, General Manager  
The Metropolitan Water District of Southern California  
P.O. Box 54153

Los Angeles, CA 90054-0153  
jkightlinger@mwdh2o.com

CAWCD:  
Mr. Theodore "Ted" C. Cooke, General Manager  
Central Arizona Project  
P.O. Box 43020  
Phoenix, AZ 85080  
tcooke@cap-az.com

United States Bureau of Reclamation:  
Mr. Brent Rhees  
Regional Director, Upper Colorado Region  
125 South State Street, Room 61 07  
Salt Lake City, UT 84138-1147  
brhees@usbr.gov

## **G. EFFECTIVE DATE/TERMINATION**

### **G.1 Effective Date and Notice of Non-liability.**

This Agreement shall become effective and enforceable upon approval and signature of each Upper Colorado Commissioner to the Commission or his or her designee and the designated representative(s) for the System Conservation Partners. The Parties shall not be liable to perform, pay or reimburse for any performance, hereunder, including but not limited to, costs or expenses incurred or be bound by any provision hereof prior to the Effective Date.

### **G.2 Term and Termination.**

- a. The term of this Agreement shall commence on the Effective Date and shall remain in effect until the latter of: (1) July 30, 2016; or (ii) December 31 of the year in which the latest SCIA expires, unless sooner terminated as provided for below, herein. Performance of the Parties' respective obligations under this Agreement shall begin as soon as practicable following commencement of the Effective Date.
- b. The Parties may mutually agree to extend the term of this Agreement for a period not to exceed two months if the Parties are negotiating a replacement agreement or term extension or an amendment to the Agreement, at or near the end of any initial term or an extension thereof. The provisions of the Agreement in effect when said notice is given shall remain in effect during said two-month extension. However, the two-month extension shall immediately terminate when and if a replacement Agreement becomes effective following approval of the Commission and the System Conservation Partners.

G.3 Early Termination.

- a. Generally – This Agreement may be terminated in its entirety by written agreement of the Parties. In the event of complete termination of this Agreement, the Commission shall refund to the System Conservation Partners all Pilot Program Funds not expended or encumbered for expenditure as of the day of termination.
- b. System Conservation Partners – Any System Conservation Partner, Federal or Non-Federal, may terminate its participation in this Agreement on 30-days written notice to the other Parties. Termination by any one Party except the Commission does not result in termination of this Agreement. Termination by any Party, other than the Commission, will result in forfeiture of all Pilot Program Funds that have been paid by that Party to the Commission or Pilot Program Funding Account and/or that are encumbered for expenditure to fund a pilot project approved according to Sections B and C, *supra*.
- c. Commission – The Commission may, in its sole discretion, terminate this Agreement in whole or in part, for cause or convenience. Exercise by the Commission of this right shall not be deemed a breach of its obligations hereunder. To accomplish early termination for cause or convenience, the Commission shall provide written notice of termination to the System Conservation Partners in accordance with Section F.1., Notice, hereof specifying the Effective Date of termination and whether it affects all or a portion of this Agreement. To the extent specified in the notice of termination, the Commission shall not incur further obligations or render further performance past the Effective Date of such notice. If the Agreement is terminated by the Commission for cause or convenience, the System Conservation Partners shall be refunded all unencumbered Pilot Program Funds that were previously transferred to the Commission for distribution as part of the Pilot Program. Unless otherwise jointly instructed by the System Conservation Partners, the Parties recognize that funds to be refunded as set forth in this provision will be equal to the funding provided by each Non-Federal System Conservation Partner minus the funding expended and encumbered and may include any proportionate share of interest, minus any proportionate share of fees associated with maintaining the account and any proportionate share of other administrative costs incurred by the Commission that have been previously agreed to by the Parties. At the time of notice of termination, the Commission shall identify how any Pilot Program Funds encumbered but not yet released for distribution to Project Proponents shall be paid out according to the terms of the SCIA's for Project Proponents' participation in the Pilot Program



## **H. OBTAINED OR DEVELOPED INFORMATION**

The Parties recognize that the information obtained or developed from activities performed under this Agreement may be public information that is available for release upon request, except to the extent otherwise provided by law.

## **I. RIGHTS TO DATA/INFORMATION**

For activities performed under this Agreement, all information and data obtained or developed by the Parties and Project Proponents, contractors or vendors as allowed by their contracts, shall be available upon request, except where prohibited by law, to the other Parties without further charge. Use of said reports, data, and information shall appropriately reference the source of such information.

## **J. MISCELLANEOUS**

### **J.1 No Precedent.**

Neither the terms and conditions in this Agreement nor the execution of this Agreement shall be deemed to establish any precedent for managing Consumptive Use by the Commission or any Upper Division State. Nor does this Agreement give any Party any rights to obtain any similar agreement after the expiration of the term of this Agreement. Moreover, nothing in this Agreement or in the execution of this Agreement, shall be deemed to affect, influence or otherwise give meaning to any particular provision of the Colorado River Compact, Upper Basin Compact, Boulder Canyon Project Act, Supreme Court Consolidated Decree in Arizona v. California, 1944 Mexico Water Treaty and its related Minutes of the International Boundary and Water Commission, Colorado River Storage Project Act, Colorado River Basin Project Act, or related rules and regulations that together govern and inform management and allocation of resources included in the Colorado River System.

### **J.2 Reservation of Rights and Authorities.**

Neither the terms and conditions of this Agreement, nor its execution by the signatory Parties shall be deemed to limit, reduce or alter any Party's rights, authorities or obligations under existing state or federal law or any signatory Party's current by-laws, if applicable. Furthermore, each Party reserves the right to exercise and protect its respective rights, obligations and entitlements related to water from the Colorado River System as it deems appropriate.

### **J.3 Entire Agreement/Severability.**

This Agreement contains the entire understanding of the Parties with respect to the subject matter hereof, and supersedes any prior understanding between the Parties, except as set forth herein, whether written or oral.

J.4 Counterparts.

This Agreement and any amendments thereto may be executed in counterparts, each of which shall be deemed an original, but all of which, when taken together, shall constitute one and the same instrument with the same force and effect as though all signatures appeared on a single document.

J.5 Amendment.

This Agreement may not be modified or amended except in writing executed by all the Parties.

J.6 Ambiguities.

Each Party and its counsel have participated fully in the drafting, review and revision of this Agreement. A rule of construction to the effect that ambiguities are to be resolved against the drafting Party will not apply in interpreting this agreement, including any amendments or modifications.

J.7 Existing Law.

- a. Compliance with existing laws - The Parties intend the implementation of this Agreement and any uses of water as a result of this Agreement, to be consistent with existing law, including, but not limited, to the Colorado River Compact, the Upper Basin Compact, the Boulder Canyon Project Act, the 1944 Mexico Water Treaty, the Colorado River Storage Project Act, Supreme Court Consolidated Decree in Arizona v. California, and the Colorado River Basin Project Act. The Parties further intend for this Agreement to be consistent with the water rights and administration laws of the Upper Division State(s) in which the Pilot Program is to be implemented.
- b. Reaffirmation of existing law - Nothing in this Agreement is intended to, nor shall this Agreement be construed so as to, diminish or modify the rights or entitlements of any Party, or of water users, under existing law to waters from the Colorado River System.

J.8 Assignment.

No Party may assign its rights or obligations under this Agreement to another person or entity without written consent of the other Parties.

J.9 Officials Not to Benefit.

No Member of or Delegate to the Congress, or Resident Commissioner, or official of Reclamation, DW, MWD, SNWA, or CAWCD or any Elector or Electors shall benefit

from this Agreement other than as a water user or landowner in the same manner as other water users or landowners.

J.10 Third Party Beneficiaries.

No Party to this Agreement intends for this Agreement to confer any right or entitlement to benefits from this Agreement upon any person or entity that is not signatory to this Agreement upon a theory of third-party beneficiary or otherwise.

J.11 Jurisdiction/venue.

This Agreement shall be interpreted, governed by, and construed under applicable federal law. To the extent permissible under the Federal Rules of Civil Procedure and other applicable federal authority, venue for adjudication of any disputes under this Agreement shall be agreed to by the adjudicating Parties. In the event no agreement can be reached, venue for adjudication of any disputes under this Agreement shall be in an appropriate federal court within the DC Circuit. Consistent with Section J.1, *supra*, this provision shall not be construed as setting precedent for any other current or future agreement among all Parties or a subset thereof.

J.12 Joint Defense.

The Parties may in the future enter into an agreement for joint defense against third party claims.

J.13 Force Majeure.

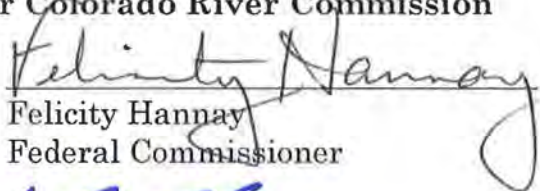
No Party shall be considered to be in default in the performance of any of its obligations under this Agreement when a failure of performance shall be due to any cause beyond the control of the Party affected, including but not limited to, facilities failure, flood, earthquake, storm, lightning, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority which by exercise of due diligence and foresight such Party could not have reasonably expected to avoid. A Party rendered unable to fulfill any of its obligations under this Agreement by reason of an uncontrollable force shall give prompt written notice of such act to the other Parties and shall exercise due diligence to remove such inability with all reasonable dispatch.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the day and year first written above.


*[Signatures on following pages]*

**Upper Colorado River Commission**

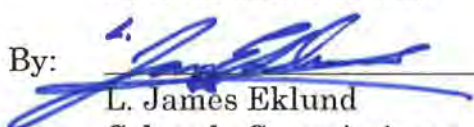
By:

  
Felicity Hannay  
Federal Commissioner

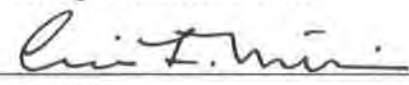
By:

  
Patrick Tyrrell  
Wyoming Commissioner


By:

  
L. James Eklund  
Colorado Commissioner

By:

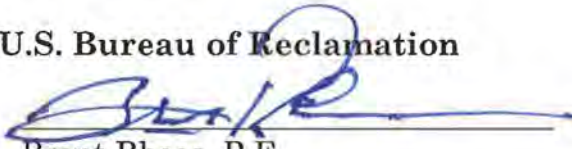
  
Eric Millis  
Utah Commissioner

By:

  
Amy Haas  
New Mexico Commissioner

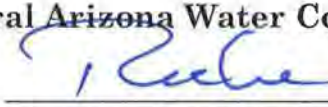
**The U.S. Bureau of Reclamation**

By:

  
Brent Rhees, P.E.  
Upper Colorado Regional Director

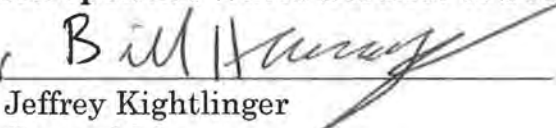
**Central Arizona Water Conservation District**

By:

  
Theodore "Ted" C. Cooke  
General Manager


**The Metropolitan Water District of Southern California**

By:

  
Jeffrey Kightlinger  
General Manager

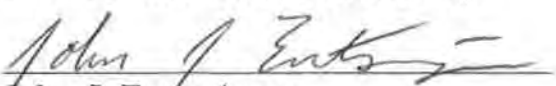
**City and County of Denver, acting by and through its Board of Water Commissioners**

By:

  
James S. Lochhead  
Manager/CEO

**Southern Nevada Water Authority**

By:

  
John J. Entsminger  
General Manager