WELLTON-MOHAWK IRRIGATION AND DRAINAGE DISTRICT
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December 6, 2023

Janet Jernigan
Mayor, City of Needles, California
817 3rd Street
Needles, CA 92363

Via Email: jjernigan@cityofneedles.com
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pinkney@sbemp.com

Re: WMIDD Intentionally Created Surplus ("ICS") Exhibit

Dear Mayor Jernigan:

The Wellton-Mohawk Irrigation and Drainage District ("WMIDD" or "the District") relies on Colorado River to irrigate nearly 60,000 acres of cropland in the Gila Valley of southwest Arizona. The District's growers produce a variety of important agricultural products including lettuce and other greens, broccoli, and vegetable seeds. Together, growers in the Yuma area supply more than 90% of the winter leafy greens consumed in the United States.

WMIDD's growers raise these crops with levels of water efficiency that eclipse agricultural regions elsewhere in the Colorado River Basin and the Nation as a whole. The District's excellent efficiency is the result of growers perfecting the art of agriculture in the Southwest over multiple generations. Now more than ever, WMIDD and its growers pride themselves on their efficiency and have strong incentives to save water.

The Intentionally Created Surplus ("ICS") program established by the Department of the Interior in 2007 helps entities relying on Colorado River water to use that water more sustainably and rewards extraordinary conservation efforts. WMIDD is entitled to the consumptive use of 278,000 acre-feet of Priority 3 mainstream Colorado River water, and so the District may create ICS under applicable governing documents including the 2007 Interim Guidelines, the 2019 Drought Contingency Plan, and the Arizona ICS Framework Agreement.

Under Article 3.2 of the Lower Colorado River Basin ICS Forbearance Agreement, executed on December 13, 2007, the creation of ICS requires an approved Exhibit to that agreement. Exhibits may be added with the written approval of all the parties to that agreement, which approval "shall not be unreasonably withheld." As a party to the Forbearance Agreement, the City of Needles, California is bound by the terms of that agreement.

Here, WMIDD proposes a new Exhibit, included with this letter, which would allow WMIDD to create ICS by continuing to invest in numerous irrigation efficiency activities that allow the District's growers to leave tens of thousands of acre-feet of water in the Colorado River every year. The District plans to create up to 10,000 acre-feet of ICS each year pursuant to this Exhibit. Also included here are copies of the 2007 Interim Guidelines, the 2007 Forbearance Agreement

(without its original Exhibits), Exhibit 1 to the 2019 Lower Basin DCP Agreement ("Lower Basin Drought Contingency Operations"), and the Arizona ICS Framework Agreement.

To date, WMIDD has received little to no meaningful recognition of its extraordinary conservation efforts. Approving the District's proposed Exhibit would finally give WMIDD's growers the credit they deserve for their ongoing stewardship of the Colorado River system, on which millions of Americans rely.

The District appreciates your attention to this proposal and looks forward to its inclusion in the ICS program in accordance with the terms of the Forbearance Agreement. We anticipate your response within 120 days of the date of this letter, in accordance with Article II(4)(d) of the Lower Basin DCP Agreement.

Should you have any questions or need any additional information, please contact our General Counsel, Wade Noble, at wade@noblelaw.com or (928) 343-9447, or Associate General Counsel, Meghan Scott, at meghan@noblelaw.com.

Sincerely,

Robert R. Woodhouse
Board President, WMIDD

Encl.: WMIDD EC-ICS Exhibit AE, 2007 Interim Guidelines, 2007 Forbearance Agreement, 2019 DCP LBOps, 2019 Arizona ICS Framework Agreement

CC: Jacklynn Gould, Regional Director, United States Bureau of Reclamation, Lower Colorado Region
Thomas Buschatzke, Director, Arizona Department of Water Resources
Bart Fisher, Board President, Palo Verde Irrigation District
Alex Cardenas, President, Imperial Irrigation District
Jim Barrett, General Manager, Coachella Valley Water District
Adel Hagekhalil, General Manager, Metropolitan Water District of Southern California
John Entsminger, General Manager, Southern Nevada Water Authority
Eric P. Witkoski, Executive Director, Colorado River Commission of Nevada

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Exhibit AE

Wellton-Mohawk Irrigation and Drainage District ("WMIDD")
Extraordinary Conservation Intentionally Created Surplus ("EC-ICS")

Irrigation Efficiency Practices

I. ICS Category: Extraordinary Conservation Intentionally Created Surplus

II. ICS Subcategory: 2.1 H, Other extraordinary conservation measures

III. Term: Jan. 1, 2025 – Dec. 31, 2026

IV. Background:

A. Yuma-Area Agriculture:

More than a century ago, growers in the Yuma Valley and adjacent areas of southwest Arizona began irrigating fields consisting of some of the most productive soil in the United States. Early irrigation practices were generally crude and inefficient. Beginning in the 1960s, however, a combination of factors — including increased salinity of Colorado River water and a transition to a more consolidated food industry — pushed Yuma-area agriculture to identify innovative ways to improve irrigation consistency and efficiency.[1]

Today, Yuma-area growers rely on Colorado River water to grow America's winter leafy greens and a wide variety of other valuable agricultural products. These growers feed the Nation. The cultural practices used set Yuma far apart from other farming regions in the Colorado River Basin and the United States as a whole.

In recent decades, Yuma-area agriculture steadily increased its productive output, doubling crop yields in some cases and increasing the economic value of the area by 700%. Over the same period, its water use markedly decreased, by an average of 15% since 1990 (0.8 acre-foot/acre) and nearly 18% since 1975 (1.0 acre-foot/acre).[2] This decrease is attributable to a variety of factors, including shifts in cropping patterns but especially the implementation of numerous irrigation efficiency practices that leave tens of thousands of acre-feet of water in the Colorado River every year.

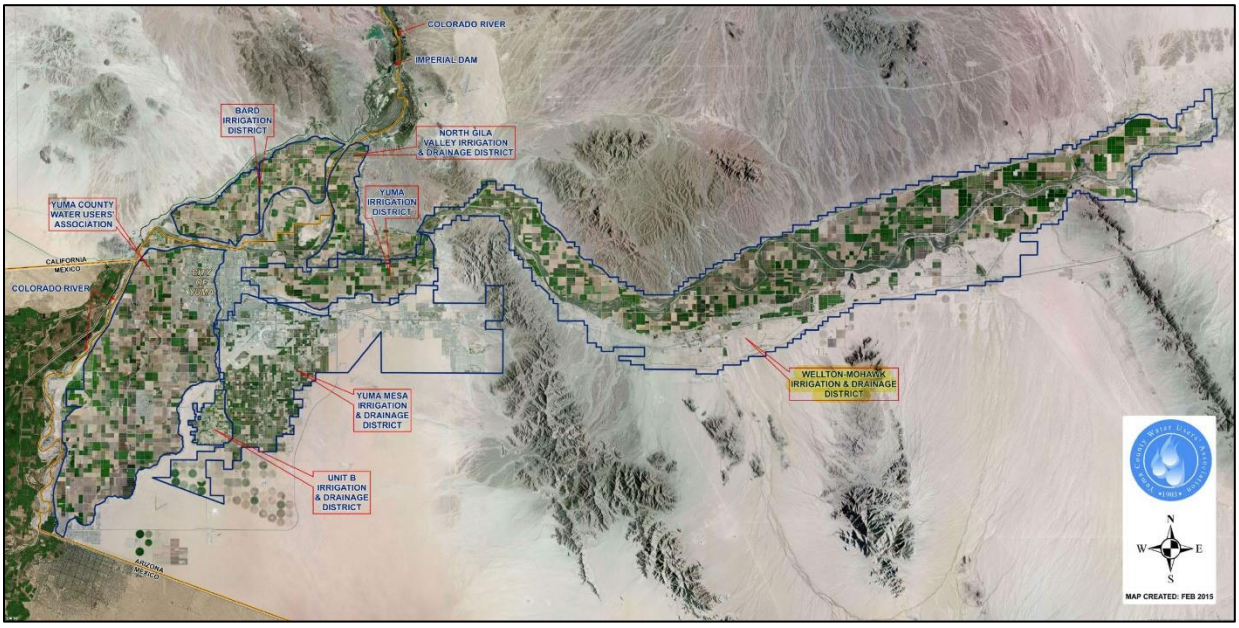
B. Wellton-Mohawk Irrigation and Drainage District ("WMIDD" or "District"):

WMIDD was established in 1951 to contract with the United States for the operation, maintenance, and repayment of the cost of the Wellton-Mohawk Division of the Bureau of

[1] *See* YUMA CNTY. AGRIC. WATER COALITION, A CASE STUDY IN EFFICIENCY – AGRICULTURE AND WATER USE IN THE YUMA, ARIZONA AREA, at 11–12 (Feb. 2015), https://new.azwater.gov/sites/default/files/Final%20Yuma%20Report%20021715.pdf.

[2] *See id.* at 17.

Reclamation's Gila Project. Although it relies exclusively on Colorado River water to irrigate about 59,000 acres of cropland, WMIDD is located within the valley of the Gila River, a now-typically dry tributary of the Colorado River. The District is laid out from West to East, stretching from the Gila Canal on the west to Texas Hill on the east.



Map of Yuma-area irrigation districts, including WMIDD shown on the far right.

Under its consolidated contract executed pursuant to Section 5 of the Boulder Canyon Project Act of 1928, the District is entitled to the consumptive use of 278,000 acre-feet ("AF") of Priority 3 Colorado River water.[3] WMIDD's landowners and growers use this water to grow a variety of high-value agricultural products, including lettuce and other greens, broccoli, vegetable seeds, corn, cantaloupe, durum wheat, alfalfa, Sudan grass, and Bermuda grass seed.[4]

Owing to a variety of innovative production and irrigation efficiency practices, the District's growers can raise all these crops with a level of water efficiency unmatched by any growers outside the Yuma area. Yuma-area growers, including those in WMIDD, achieve average application efficiencies of 80–90%.[5] In fact, recent research indicates that many cropping

[3] *See* BUREAU OF RECLAMATION, *Listing of Individual Colorado River Entitlements in the State of Arizona – Third Priority*, at 1 (Dec. 2022), https://www.usbr.gov/lc/region/g4000/contracts/entitlements/Entitlements_AZ_Priority_3.pdf.

[4] *See* WMIDD Crop Census Reports for 2020–2022, *on file with WMIDD*.

[5] *See* YUMA CNTY. AGRIC. WATER COALITION, *supra* note 1, at 18; George Frisvold et al., *Evaluating Gravity-Flow Irrigation with Lessons from Yuma, Arizona, USA*, 10 SUSTAINABILITY 1548, 1565 (May 14, 2018), https://www.mdpi.com/2071-1050/10/5/1548; Charles Sanchez & Andrew French, Yuma Ctr. of Excellence for Desert Agric., *Quantitative Assessments of Water and Salt Balance for Cropping Systems in the Lower Colorado River Region*, at 7 (Oct. 2023), *on file with WMIDD*.

systems have average application efficiencies exceeding 90%.[6] This efficiency results in the District routinely using much less Colorado River water than it might otherwise need.

WMIDD's efficiency is a model for agriculture nationwide, but especially throughout the Colorado River Basin. The Basin is currently facing its worst drought in recorded history. Meanwhile, food prices in the United States have steadily increased in the last several years. Leadership like that exhibited by Yuma-area agriculture is thus more important than ever.

Produce fields within the Wellton-Mohawk Irrigation and Drainage District.

The District is proud to achieve levels of efficiency unmatched elsewhere. Yuma-area agriculture is approximately 75% more water-efficient than agriculture in the rest of the Colorado River Basin.[7] It is proud to provide the Nation with high-quality agricultural products while conserving our most important natural resources. And it is proud to be a steward of the health and sustainability of the Colorado River system, on which millions of Americans rely.

Now, WMIDD is once again seeking innovative ways to ensure continued efficient use of its Colorado River entitlement. In particular, the District is seeking to participate more fully in

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[6] *See* Sanchez & French, *supra* note 5, at 28–31. All but two crops studied by Sanchez and French (furrow-irrigated celery and furrow-irrigated iceberg lettuce) had application efficiencies greater than 80%, several had application efficiencies of 90% or higher, and some reached 100% efficiency. *See id.*

[7] *See* YUMA CNTY. AGRIC. WATER COALITION & YUMA FRESH VEGETABLE ASS'N, *Yuma Is to Agriculture what Silicon Valley Is to Computers*, ARIZ. FARM BUREAU (Mar. 22, 2023), https://www.azfb.org/Article/Yuma-is-to-Agriculture-What-Silicon-Valley-is-to-Computers.

the Intentionally Created Surplus ("ICS") program established by the Department of the Interior in 2007. This participation would recognize its excellent irrigation efficiency and enable its ongoing stewardship of the Colorado River.

C. Intentionally Created Surplus:

In 2007, facing what was then the worst stretch of drought years in recorded history, the Secretary of the Interior ("Secretary") issued a Record of Decision for the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead ("2007 Interim Guidelines"). Among other things, the 2007 Interim Guidelines established a program for the creation and delivery of ICS. ICS is unused water intentionally conserved by those with Colorado River entitlements through special conservation activities. The program promotes conservation and ensures adequate storage in Lakes Mead and Powell.

To accompany the 2007 Interim Guidelines, several parties with entitlements to Colorado River throughout the Lower Basin executed the Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement ("Forbearance Agreement"). Under the Forbearance Agreement, the parties agreed to waive certain rights to surplus Colorado River water under the Consolidated Decree in *Arizona v. California*, 547 U.S. 150 (2006). The Forbearance Agreement originally included fifteen Exhibits (A through O). Each Exhibit details an individual entity's plan to create ICS through various conservation measures contemplated by the 2007 Interim Guidelines. Each party to the agreement separately approved each Exhibit. The agreement allows new Exhibits to be added with written approval by all the parties. It also specifies that "[s]uch approval shall not be unreasonably withheld."[8]

Later, in 2019, the United States and the Colorado River Basin states developed and executed the Agreement Concerning the Colorado River Drought Contingency Management and Operations ("Companion Agreement"). Attached to the Companion Agreement was the Lower Basin Drought Contingency Plan Agreement ("LBDCP"), designed in part to create greater flexibility and incentivize additional voluntary conservation of water as ICS.

Among other things, Exhibit 1 to the LBDCP, entitled Lower Basin Drought Contingency Operations ("LBOps"), established additional requirements for adding new Exhibits to the Forbearance Agreement. Most important here, the parties to the LBDCP must approve or reject a proposed Exhibit within 120 days and provide a "meaningful explanation" of their decisions.[9]

As part of the LBDCP process, WMIDD received approval from the Secretary to add one new Exhibit to the Forbearance Agreement, Exhibit V. Exhibit V allows WMIDD to create Extraordinary Conservation ICS ("EC-ICS") by fallowing cropland with a recent history of

[8] *See* 2007 Forbearance Agreement, art. 3.2, https://www.usbr.gov/lc/region/programs/strategies/agreements/Forbearance.pdf.

[9] *See* LBDCP, art. II(4)(d), https://new.azwater.gov/sites/default/files/media/Attachment%20B%20-%20LB%20DCP%20Agreement%20%28Final%29.pdf.

irrigation and thereby reducing the District's consumptive use of Colorado River water. With the addition of the LBDCP Exhibits, there are a total of thirty ICS Exhibits today (A through AD).

Here, WMIDD proposes another Exhibit to the Forbearance Agreement, under which it may receive ICS credits for extraordinary conservation activities associated with irrigation of lands within the District. In particular, WMIDD proposes to create EC-ICS by continuing to use various irrigation efficiency practices. If the District did not affirmatively continue to use these practices, it would beneficially use a significant volume of the water otherwise saved.[10] It is past time that Yuma-area growers receive recognition and credit for their extraordinary conservation efforts, which contribute tens of thousands of acre-feet of water to the Colorado River each year.

V. Project Description:

A. Overview:

The water-saving irrigation efficiency practices to be employed by the District, and which will create EC-ICS, can be divided into two broad categories, summarized in the chart below. Growers within WMIDD sometimes think about these activities less as water-saving measures, and more as cultural best practices for the crops grown. Yet water is never far from their minds.

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[10] Creation of EC-ICS by WMIDD as described in this Exhibit is comparable to that allowed by previously approved Exhibits for the Metropolitan Water District of Southern California ("MWD") and the Southern Nevada Water Authority ("SNWA"), among others.

For instance, see Exhibit H, "Metropolitan Funded Imperial Irrigation District Water Conservation Program." Exhibit H, at 1–2 (Dec. 13, 2007), https://www.usbr.gov/lc/region/programs/strategies/agreements/Forbearance.PDF. That Exhibit allows MWD to annually claim EC-ICS credits from water conserved because of irrigation efficiency improvements within IID, like concrete-lined canals, funded by MWD as early as 1988. *See id.*

Similarly, Exhibit W allows SNWA to create EC-ICS and annually claim ICS credits from water conserved because of municipal conservation measures implemented as early as 2002. *See* Exhibit W, "Southern Nevada Water Authority EC-ICS Using Municipal Conservation and Offstream Storage for Implementation under the Lower Basin Drought Contingency Plan." LBOps ICS Exhibit W, at 1 (May 6, 2019), https://www.usbr.gov/lc/region/g4000/dcpdocs/SNWA_ICS_Exhibits_and_Transmittal_Letter.pdf.

Exhibits X and Y, "Landscape Transformation Program" and "Indoor Water Conservation Devices," are also analogous. Exhibit X annually credits WMD with EC-ICS for turf removed as far back as 2008, and for up to thirty years, without any further action by MWD after the initial removal, funded in part by MWD rebates. *See* LBOps ICS Exhibit X, at 1 (May 6, 2019), https://www.usbr.gov/lc/region/g4000/dcpdocs/MWD_ICS_Exhibits_and_Transmittal_Letter.pdf.

Exhibit Y provides for EC-ICS creation and annually recurring ICS credits from water saved because of water-efficient fixtures installed up to twenty years prior. *See* LBOps ICS Exhibit Y, at 1–2 (May 6, 2019), https://www.usbr.gov/lc/region/g4000/dcpdocs/MWD_ICS_Exhibits_and_Transmittal_Letter.pdf.

MWD and SNWA could, in theory, undo all these extraordinary conservation efforts in the future and thus use more water than they otherwise do each year. In the same way, conservation by WMIDD requires repeated choices to implement (or refrain from un-implementing) its efficiency practices, at significant economic cost. Absent those choices, the District would use much more water than it actually does.

Now more than ever, the District's growers pride themselves on their efficiency and have strong incentives to save water. The water savings associated with these activities are substantial, but so is their cost. Therefore, these practices constitute extraordinary conservation by the District.

WMIDD Irrigation Efficiency Practices	
Pre-irrigation earthwork activities	**Water delivery and application activities**
Precision GPS- and laser-leveled fields Furrow compression using press wheels (a.k.a. "bolas") Shortened irrigation runs Soil swaps High-density plantings	Concrete-lined canals, ditches, and laterals High-flow concrete turnouts Electronic metering devices and gate control Sprinkler germination Full-crop life sprinkler irrigation Greenhouse germination and transplant production Drip irrigation
Total projected water savings: 48,313 AF[11]	

As shown in the lefthand column of the chart above, WMIDD will continue to prepare its fields for planting and irrigation in several ways that promote the efficient application of water. This includes leveling fields with costly GPS and laser technologies, compressing furrows with press wheel implements known as "bolas," using shorter irrigation runs, conducting "soil swaps," and high-density plantings. These practices allow for the quick and uniform movement of water across the District's fields, prevent loss of water below the root zones of crops, and overall maximize application efficiencies.

In addition, the righthand column shows that WMIDD will continue to deliver and apply irrigation water to its fields as efficiently as possible. Some of these activities are ubiquitous throughout the District. These include the use of concrete-lined canals, ditches, and laterals; high-flow concrete turnouts; and electronic metering devices and gate control using Supervisory Control and Data Acquisition ("SCADA") systems. Others are used for certain fields and crops where appropriate, including sprinkler germination, full-crop life sprinkler irrigation, greenhouse

[11] *See infra* section VIII for the methodology by which this volume is estimated. Actual volumes are subject to actual total irrigable acreage and consumptive use in the relevant year of ICS creation.

germination and transplant production, and drip irrigation. These practices maximize "crop per drop" — ensuring maximally efficient use of water applied to the fields.

Altogether, these practices allow the District annually to consumptively use over 48,000 AF less Colorado River water than it might otherwise need to produce comparable crop yields. Therefore, absent these measures, a significant volume of the water saved thereby would be beneficially used by WMIDD.[12]

Below, each of these measures is described in depth. Each conserves water at great economic cost to the District and its landowners and growers. Growers must affirmatively choose before each season whether and to what extent to employ each of these measures, save those that needed implemented only once but continue to provide crucial water savings every year.[13] Thus, the District's water-saving practices constitute conservation far more "extraordinary" than those underlying previously approved ICS Exhibits.[14]

Put differently, although many of these practices have been used by WMIDD and its landowners and growers for decades, they are by no means a given. Rather, growers and District management must make difficult decisions to implement those practices best suited to producing excellent yields in an economic and sustainable way, or to refrain from such practices in turn. Just as a grower might choose to laser-level a lettuce field one year because the high price of lettuce justifies the cost, the grower may decide not to do so in a later year when it is not economical. To that point, each of these practices involve either high upfront capital expenditures and/or significant yearly investments by growers or the District.[15]

The conservation created by these practices is therefore truly extraordinary. The choice of whether and to what extent to use them directly impacts the extent to which WMIDD conserves precious Colorado River water it might otherwise need to feed the Nation. It is past time that Yuma-area growers receive recognition and credit for their extraordinary conservation efforts, which contribute tens of thousands of acre-feet of water to the Colorado River each year.

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[12] *See supra* note 10 (comparing EC-ICS creation by WMIDD under this Exhibit to previously approved EC-ICS Exhibits).

[13] *Cf.* Exhibit H, *supra* note 10 (allowing repeated annual EC-ICS creation for canals lined within IID more than thirty years ago).

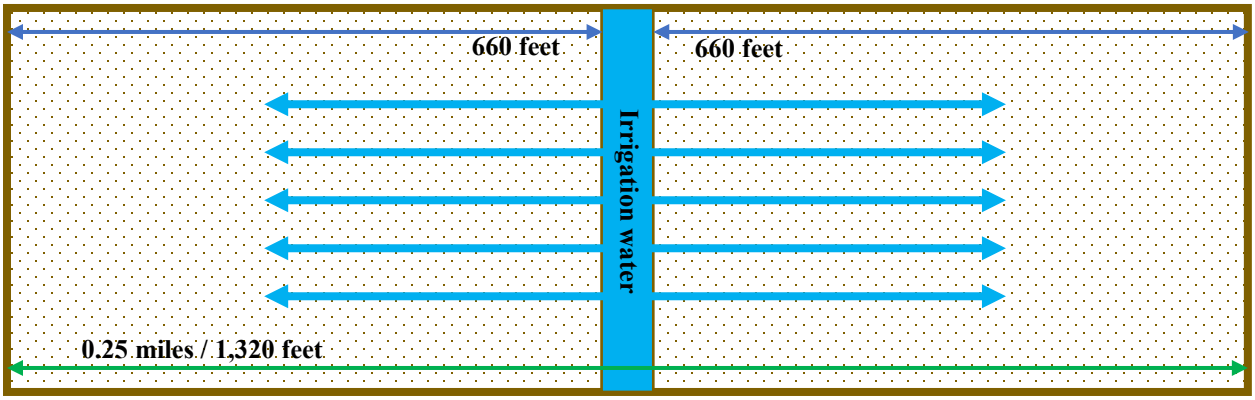
[14] For example, MWD is eligible under Exhibit X for EC-ICS credits based on water savings attributable to turf removed under an incentive program nearly two decades ago. *See* Exhibit X, *supra* note 10, at 1–2. Once a particular unit of turf is removed, MWD need take no further action to enjoy the associated water savings and can receive EC-ICS credit for up to thirty years thereafter. *See id.*; MWD Plan for the Creation of EC-ICS, Calendar Year 2022, *supra* note 10, at 14. By contrast, WMIDD and its landowners and growers must continually invest in their irrigation efficiency practices every year, or else the associated water savings would not result.

[15] In fact, a highly conservative estimate of the cost to WMIDD and its growers of implementing these measures is at least $38.6 million each and every year. This is about $800 per acre-foot conserved.

B. Pre-Irrigation Earthwork Activities:

This section concerns practices that occur before a field is planted and irrigated. There are several stages of preparing a field for irrigation, from disking and burying previous crop residue, to fracturing the soil so salts can leach out, to levelling the field to a perfectly flat grade, all before a seed is even planted. These practices promote the uniform distribution of water across the fields, ensure consistent germination and development of crops, and maximize yields.[16]

Shortened irrigation runs. First, growers within WMIDD use irrigation runs that are much shorter than traditional irrigation systems. Traditional fields generally have irrigation runs ranging from 0.25–0.5 miles long. Every flood-irrigated field in WMIDD, however, has much shorter irrigation runs, usually around 0.1 miles or 660 feet long.



Simplified diagram of standard field layout within the District, i.e., one 1,320-foot field cut down the middle to two fields with 660-foot shortened irrigation runs.

Shorter irrigation runs allow water to move more quickly across the field, reducing percolation and increasing uniformity of distribution. Growers maximize this benefit by engineering their fields to match the increased rate of flow from high-flow turnouts, discussed later, as well as the field's border dimensions and soil type. Shorter runs allow water to be shut off sooner while ensuring it reaches the end of the field.

Shortened irrigation runs increase yields for the crops grown within the District. They also save significant volumes of water.[17] Depending on the inlet flow rate and the application depth required by each crop, cutting the length of irrigation runs in half can improve irrigation

[16] *See* Sanchez & French, *supra* note 5, at 7, 35–42 (describing why pre-irrigation flooding to leach salts is crucial to the success of Yuma-area cropping systems and concluding that such leaching "is a beneficial use of water").

[17] *See, e.g.*, Sanchez & French, *supra* note 5, at 32 (noting that application efficiencies for summer crops in the Yuma area, such as Durum wheat and Sudan grass, are higher than expected owing to "improvements in irrigation infrastructure" as well as "expert manipulation of flow and cutoff distance").

efficiency by about 15–20%.[18] Cutting the length in half again can improve efficiency by an additional 5–10%.[19]

Stitched photos of a standard lettuce field, divided into two fields with 660-foot shortened irrigation runs (left); close-up of lettuce field with water flowing down shortened runs (right).

Precision GPS- and laser-leveled fields. Every irrigated acre within the District is dead-leveled or leveled to grade using costly laser or GPS technology. Fields are leveled at least every year, and sometimes more frequently. Dead-leveling is leveling a field to a 0.0 slope, with no or negligible drop from one end to the other, while leveling to grade leaves a slight incline. Dead-leveling provides optimal water savings when coupled with sprinkler irrigation, which is the primary method used throughout the District.

Laser-leveling involves using a station in the middle of a field that projects a laser across it on a level plane. A tractor pulls a leveling blade or grader, which communicates with a control terminal in the tractor's cab. The control terminal receives inputs from the laser and tells the farmer whether to raise or lower the grader, to remove more or less soil as needed to create a perfectly flat, level field.

GPS leveling systems, an even newer and more costly technology, use satellites to ensure a level field surface. GPS levelling is slightly more accurate, because the grader can be adjusted up and down as well as tilted left and right. Both methods ensure no more than a quarter-inch difference in field elevation from any one end to the other.

Leveling a field improves the uniformity of water distribution, which drastically increases crop yields and saves water. Leveling eliminates ponding at the downstream end of the field and allows sufficient time for infiltration at the inlet end of the field, avoiding over- and under-

[18] *See* C.A. Sanchez et al., *Management Guidelines for Efficient Irrigation of Vegetables Using Closed-End Level Furrows*, 96 AGRIC. WATER MGMT. 43, 49–51 (2009).

[19] *See id.*

saturation. Additionally, minimal grades and fine soil help to reduce friction between the soil and water, reducing percolation below the root zone of the crop and eliminating runoff.

Tractor pulling a GPS levelling machine to dead-level a produce field (left); tractor pulling a laser-levelling machine, with laser station visible as a small blue tower in the right-center of the frame (right).

The water savings are substantial. An early study conducted in central Arizona estimated that leveled fields have 35–40% higher application efficiencies than traditional slope-furrow systems.[20] This translates to water savings for grain and grass crops of 0.83–2.5 AF/acre,[21] and likely even greater for higher-water use crops like produce. More recent studies out of India are in accord, finding water savings of around 30% for laser-leveled fields as compared to non-leveled fields.[22] Importantly, these savings are not cheap. Laser-leveling costs most growers between $110–120/acre, and some fields are leveled multiple times each year.[23]

Furrow compression using press wheels ("bolas"). Growers producing flood-irrigated row crops within WMIDD, representing about 70% of the District's total irrigated acreage, use implements called press wheels or "bolas." The bolas are pulled behind a tractor to compact the furrows into tight trapezoidal configurations. This reduces friction between the soil and the water, allowing rapid movement of water down the furrows, which limits percolation of water below the root zone of the crops and further improves the uniformity of water distribution.

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[20] *See* John Daubert & Harry Ayer, *Laser Leveling and Farm Profits*, Technical Bulletin No. 244, College of Agric., Univ. of Ariz., at 3 (1982), https://repository.arizona.edu/bitstream/handle/10150/602141/TB244.pdf?sequence=1.

[21] *See id.*

[22] *See, e.g.*, M.L. Jat et al., *Laser Land Leveling: A Precursor Technology for Resource Conservation*, Rice-Wheat Consortium Technical Bulletin Series 7 (2006); G.C. Wakchaure et al., *Effect of Precision Land Levelling on Microenvironment and Sorghum Productivity in Water Scarce Deccan Region*, 17 J. AGROMETEOROLOGY 149 (2015).

[23] To get some idea of the scale of this investment, if every irrigated acre in the District was laser-leveled just once each year, the total cost would easily exceed $6.9 million every year.

Steel press wheel or "bola" implement (top), tractor pulling bolas to compress furrows in lettuce field (bottom left), close-ups of lettuce field furrow after being treated with bolas (bottom right).

As with leveling fields, bolas are used in great part because they significantly improve yields for row crops like lettuce, but they also save a lot of water. As just mentioned, tightly compacting the furrows between rows prevents water from being lost below the root zone of the crops, where it cannot be beneficially used. Like laser-leveling, using bolas is a costly way to save water. Depending on the number of passes a field receives, using bolas can cost growers anywhere from $45–180/acre.[24]

Soil swaps. A growing number of landowners and growers in the District also conduct "soil swaps," an extremely expensive process of converting fields made up of low-productivity sandy soils to highly productive and water-efficient cropland. For costs ranging anywhere from a few thousand dollars per acre all the way up to $20,000/acre, sandy topsoil is removed from a field and replaced with a thick cap of more productive soil. The new soil is usually created by mixing a lower clay level with richer, imported topsoil. Soil swaps greatly increase the yield and water efficiency of fields. Growers can apply much less water to fields prepared this way than they would need to if the sandy fields were left as-is.

High-density plantings. Finally, just in the last few years growers within the District have started to plant their fields at much higher densities than is standard practice elsewhere. For instance, the typical lettuce field fifteen years ago was planted with two lines of plants for each forty-inch bed. Today, growers are increasingly planting three lines in the same forty-inch beds, increasing the productive output of the average field by about 30% — without using a single drop more water than before.

High-density plantings result in extraordinary conservation because it is an innovative and expensive way to grow produce, and it saves significant volumes of water throughout the Colorado River Basin. With demand for lettuce and other leafy greens ever increasing, growers all over the country are being asked to increase their outputs. WMIDD's growers can and do answer the call without using any more water, whereas other growers could supply the increased demand only with elevated water use.

C. Water Delivery and Application Activities:

This section deals with practices related to the delivery of water to fields and to the efficient application of water to those fields. They maximize "crop per drop" — the highest possible crop yields with as little water as practicable.

Concrete-lined canals, ditches, and laterals. All the canals, ditches, and laterals within WMIDD, apart from its main canal,[25] are lined with concrete. The Bureau of Reclamation originally built the Wellton-Mohawk Division of the Gila Project this way, but since WMIDD

[24] Assuming an average cost of about $110/acre, and around 44,000 row-cropped acres, using bolas can cost growers in WMIDD a total of over $4.8 million every year.

[25] WMIDD's main canal runs below the water table, so it gains water rather than losing it to seepage, making lining unnecessary. Additionally, lining this canal has proved technically infeasible in practice because a concrete lining literally floats on top of the water table.

took over operation and maintenance of the Division in the 1950s, the District maintains and routinely repairs the infrastructure as needed.

Unlined canals, ditches, and laterals lose large volumes of water to seepage. Concrete linings significantly reduce those losses. One study from Eastern Colorado reported that concrete-lined ditches have 70% less seepage loss than unlined ditches.[26] A more recent Chinese study found 60% water savings.[27]

Water flowing down a concrete-lined ditch (left), water running out of a high-flow concrete farm turnout (right).

High-flow concrete turnouts. Every turnout within WMIDD (i.e., the place where water is turned out of a ditch into a field) is a high-flow concrete turnout. Though most of these turnouts were installed in the early 1990s after a series of severe floods, the District and individual growers continue to maintain and regularly repair them.[28] High-flow turnouts allow larger and

[26] *See* Rachel Barta et al., COLO. WATER RES. RSCH. INST., COLORADO HIGH PLAINS IRRIGATION PRACTICES GUIDE 1–2 (2004), https://api.mountainscholar.org/server/api/core/bitstreams/406cf962-a8f3-4415-89c5-4005d52cb377/content.

[27] *See* Xudong Han et al., *An Experimental Study on Concrete and Geomembrane Lining Effects on Canal Seepage in Arid Agricultural Areas*, 12 WATER 2343, at 2 & n.31 (2020).

[28] *Cf.* LBOps ICS Exhibit Y, *supra* note 10 (EC-ICS creation by water-efficient fixtures installed up to twenty years ago).

more consistent volumes of water to be applied to a field at a higher rate (e.g., 15–20 cubic feet per second) compared to traditional turnouts. The greater the speed of the water as it moves across the field, the less percolates below the root zone of the crops where it cannot be used. As a result, high-flow turnouts yield significant water savings.[29]

Electronic metering devices and gate control. The District also uses electronic metering devices and remote gate control technology, including Supervisory Control and Data Acquisition ("SCADA") systems, on all its water delivery infrastructure except for individual growers' gates, which are monitored with meter stems.

Combined with other control methods like constant-head orifices, these systems provide consistent and predictable flow rates to growers and reduce operational spills. WMIDD uses SCADA specifically so its ditch riders can monitor flow, water elevation, and gate openings, and operate headgates, all remotely.

As with the other practices described here, electronic metering and gate control saves significant volumes of water. For example, a pair of studies from Australia and Oregon, each evaluating the water savings associated with the automation of just a small part of an irrigation system, reported 23% and 35% reductions in water use, respectively.[30]

Remote gate control unit in ditch rider's vehicle (left), electronic gate meter (right).

[29] *See* Brian C. Wilson et al., NEW MEXICO OFFICE OF THE STATE ENGINEER, *Water Use by Categories in New Mexico Counties and River Basins, and Irrigated Acreage in 2000*, Technical Report 51, at 41 (2003), https://tinyurl.com/57cdtsa7; ALLETTA BELIN ET AL., TAKING CHARGE OF OUR WATER DESTINY: A WATER MANAGEMENT POLICY GUIDE FOR NEW MEXICO IN THE 21ST CENTURY 38 (2002), https://www.gilaconservation.org/Text/Taking_Charge_of_our_%20Water_Destiny.pdf (reporting savings of 0.16 AF/acre from laser-leveling and high-flow turnouts on pecan orchards and alfalfa fields).

[30] *See* U.S. SOC'Y FOR IRRIGATION & DRAINAGE PROFESSIONALS, SCADA AND RELATED TECHNOLOGIES FOR IRRIGATION DISTRICT MODERNIZATION 181, 297 (2006), https://mountainscholar.org/bitstream/handle/10217/46525/101_2005-USCID-Vancouver.pdf?sequence=1#page=195.

Electronic gate control and metering stations.

Sprinkler germination. All row crops within WMIDD are germinated using sprinklers rather than traditional "subbing." Subbing is germinating crops by flooding the furrows in a field up to the seed continuously for a week or more. While subbing historically resulted in highly uniform germination, huge volumes of water were lost below the root zones of the crops where it could not be consumed and contributed to problematically high water tables. For these reasons, WMIDD now prohibits subbing.

Sprinkler germination, by contrast, involves running solid-set sprinklers continuously for about 36 hours, and thereafter for four to six hours each day as needed to keep the soil surface moist until the crop is established. For vegetable crops, sprinkler germination can reduce the water required for germination by 56–77%.[31] Once again, the water savings are not cheap. Sprinkler germination costs growers about $300–400/acre, much more than subbing.[32]

Another benefit of sprinkler germination is related to the composition of most soil in the Yuma area. Yuma-area soils are rich in salt and lime. If the soil gets even a little wet — such as by a brief rain — the surface can quickly dry and form a hard crust. Young produce plants, like

[31] *See* YUMA CNTY. AGRIC. WATER COALITION, *supra* note 1, at 33; *see also* Sanchez & French, *supra* note 5, at 23–24 (noting that an average of just 7 inches of water is used for stand establishment in the Yuma area, thanks to sprinkler germination).

[32] Again assuming about 44,000 acres planted with row crops, the cost of germinating crops with sprinklers throughout the District can easily exceed $13 million every year.

lettuce, cannot break through this crust. Established stands can also be damaged when the wind blows their stems side to side, into the sharp edges of the crust. Routine sprinkling prevents this crust from forming and improves yields, all with minimal water inputs.

Sprinkler irrigation in the Dome Valley, the westernmost portion of WMIDD, © Ted Wood/The Water Desk (top); solid-set sprinkler arrays in fields in the District, running to germinate produce crops (bottom).

Full-crop life sprinkler irrigation. All crops planted in wide-bed configurations — such as mixed greens, spinach, and more — in addition to being germinated with sprinklers, are irrigated to maturity with solid-set sprinklers. This adds about $150–200/acre to the cost of sprinkler germination, bringing the total to $450–600/acre.[33] Sprinkling a crop to maturity multiplies the water savings associated with sprinkler germination across the entire life of the crop.[34]

Greenhouse germination and transplant production. A little over 10% of irrigated acreage within WMIDD is planted with crops that are greenhouse-germinated and then transplanted. This process entails germinating certain crops — including broccoli, cauliflower, and onions — with very small volumes of water inside climate-controlled greenhouses and later transplanting the established stands in the field. The process is expensive, ranging from $1,000–1,500/acre depending on crop density.[35]

Young produce transplants growing in climate-controlled greenhouses.

[33] This would bring the total yearly cost of sprinkler germination and full-life irrigation to around $15.6 million, assuming an average cost of $525/acre and about 15,000 acres irrigated this way in a typical year.

[34] *See* Sanchez & French, *supra* note 5, at 29.

[35] 10% of WMIDD's irrigated acreage amounts to about 6,000 acres, so the annual cost of greenhouse germination and transplant production throughout the District is estimated to be at least $7.5 million.

Greenhouse germination and transplant production allows farmers to grow longer-season crops in short-season fields, improves land-use efficiency, and makes for easier weed control. It also results in more uniform production. That means growers can better predict the water needs of the plants and scheduling of their harvests and produce more desirable crops.

Some growers purchase transplants from independent suppliers, and others run their own greenhouses. In either case, the process is precise and technical. Uniformity among seedlings is a priority, as is preventing diseases like black rot. The best way to achieve all these goals is to use as little water as possible. Young produce plants, crowded together in a large greenhouse, react adversely to excess moisture in the soil and air. Controlling irrigation and humidity is crucial for the health of the plants, and it also saves a lot of water.[36]

Drip irrigation. About 3,000 acres of cropland within WMIDD, mostly growing melons, are irrigated using drip systems, including some "N-Drip" (gravity-powered) irrigation.[37] Drip irrigation involves applying water directly to the surface of the soil, next to the plant, or in the subsurface near the root zone using low-pressure, small-diameter hoses or pipes. Drip systems usually cost growers in WMIDD about $1,500/acre.[38] This cost must be incurred annually and sometimes even more frequently, for multi-cropped fields.

Although drip irrigation probably uses about the same amount of water as sprinkler irrigation, it uses much less water than traditional flood irrigation.[39] It also drastically improves yields for the crops for which it is appropriate, like melons. Finally, drip systems reduce evaporation from the soil and prevent some plant diseases.

D. Other Extraordinary Conservation Activities:

In addition to the activities described above, growers within the District engage in several other farming practices that save water. Crop selection and rotation, for example, are important

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[36] *See, e.g.*, Maryam Khozaei et al., *Evaluation of Direct Seeding and Transplanting in Sugar Beet for Water Productivity, Yield, and Quality under Different Irrigation Regimes and Planting Densities*, 238 AGRIC. WATER MGMT. 106230 (2020) (reporting that transplant production reduced applied water and evapotranspiration for sugar beets grown in Iran by 24% and 25% respectively, relative to direct seeding).

[37] As described in YUMA CNTY. AGRIC. WATER COALITION, *supra* note 1, at 41–42, as well as Sanchez & French, *supra* note 5, at 35–41, drip irrigation is not more widespread in the Yuma growing region for several reasons. For one thing, the high salt content of Yuma-area soils and the excellent application efficiencies achieved by Yuma growers necessitate periodic leaching using flood irrigation, which can limit the potential water savings associated with drip irrigation. *See* Sanchez & French, *supra* note 5, at 42. Additionally, crops are frequently planted or configured in fields in variable ways according to the type and the season. *See id.* Buried drip systems cannot be easily reconfigured in the same way, and thus limit planting configurations. *See id.*

[38] Assuming a relatively stable amount of drip-irrigated acreage, drip irrigation generally costs growers in WMIDD a total of about $4.5 million every year.

[39] *See, e.g.*, T.L. Thompson et al., *The Potential Contribution of Subsurface Drip Irrigation to Water-Saving Agriculture in the Western USA*, 8 AGRIC. SCIS. IN CHINA 850 (2009).

drivers of water consumption. In recent decades, growers have reduced production of cotton and alfalfa and turned to multi-crop systems that emphasize winter vegetables, especially lettuce and other greens. An increasing number of growers skip the summer crop rotation entirely to focus solely on winter vegetables. Multi-crop systems use much less water than perennial and full-season systems.

Irrigation decisions related to the price of crops and other factors also result in important water savings. Alfalfa, for instance, is often grown on a three-year/four-year rotation with produce to naturally till the soil and replenish nitrogen.[40] The amount of water applied typically declines from the first year in the alfalfa rotation to the last. Irrigation also varies significantly according to the price of alfalfa. If the price is high, growers typically irrigate their fields more heavily to get extra cuttings. And if the price is especially low, growers may water the alfalfa so little that it reaches the level of "deficit irrigation." This means its consumptive use of water is greater than the amount of water applied to the field.

WMIDD itself also imposes several water-saving rules on landowners and growers to encourage conservation. Along with the anti-subbing rule noted earlier, the District's Board has prohibited ponding or solarization of water.[41] The Board can also restrict or prohibit planting certain crops such as wheat late in the year when the District's water use is at its highest, and/or impose per-acre caps on growers' water use.[42]

Finally, WMIDD saves several thousand acre-feet of water every year through its policy of not using a substantial portion of irrigable-status lands for crop production.[43] In 2006, the District purchased 3,192.40 acres of farmland that are irrigable under its consolidated contract. Since then, the District's Board has repeatedly chosen not to assign the over 3,000 acres' worth of irrigable status to available lands where it could be beneficially used for crop production. WMIDD recognizes that some parties dispute whether leaving this land fallow qualifies for ICS creation.[44] Under the 2007 Interim Guidelines, fallowing-based ICS projects must show a recent history of irrigation, and the land here has no "recent" irrigation history as the Guidelines use that term (i.e., irrigation post-2005). Nevertheless, the District's repeated and costly choices not

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[40] This means that alfalfa will be grown in a field for three years, and then a produce crop will be grown in the same field for four years, on a repeating cycle.

[41] Many growers in the Yuma area flood their fields with about six inches of water for a month to kill a soil fungus called sclerotinia that afflicts lettuce plants. WMIDD, however, has disallowed such flooding and instead mandates more effective fungicide treatments that save water.

[42] In 2022, for example, the Board capped growers at 6 AF/acre out of concern that drought conditions in the Colorado River Basin could result in unprecedented cuts to Priority 3 water users in later years.

[43] *See* WMIDD DCP Fallowing Exhibit No. 2 v. 3 (Proposed), at 2–3 (Dec. 2018), https://new.azwater.gov/sites/default/files/WMIDD%20DP%20Fallowing%20Exhibit%20No%20%202%20v.3.pdf.

[44] *See, e.g.*, CAWCD's Comments on Arizona ICS Exhibits Submitted to ADWR, at 4 (Jan. 14, 2019), https://new.azwater.gov/sites/default/files/2019%201%2014%20CAWCD%20Comments%20on%20AZ%20ICS%20Exhibits_0.pdf.

to repurpose this land for crop production constitutes extraordinary conservation under the 2.1 H subcategory, and it deserves recognition. Leaving the land idle represents a foregone economic opportunity and leaves thousands of acre-feet of water in the Colorado River every year.

Though the water savings associated with these practices and policies may be more difficult to quantify than those described earlier, they are no less important to WMIDD's excellent water efficiency. They underscore the deeply rooted culture of conservation throughout the District and help growers leave water in the Colorado River.

E. Summary:

By preparing their fields prior to planting and irrigation in ways that maximize yields, growers within WMIDD also save massive volumes of water that they may otherwise need to support the same level of agricultural productivity. Once fields are planted and ready for water, irrigation is conducted with equal care and attention, leading to application efficiencies unmatched by any growers outside the Yuma area.

The efficiency practices described in this Exhibit cost the District and its landowners and growers millions of dollars every year. It's a cost they must choose to incur before each growing season, weighing the relative benefits in terms of increased crop yields and water savings. When growers do so, they leave tens of thousands of acre-feet of water in the Colorado River. Thus, these practices constitute extraordinary conservation by WMIDD. The water saved is eligible to be credited to the District as EC-ICS under the 2007 Interim Guidelines and the LBOps.

VI. Maximum Annual ICS Creation Volume:

The maximum volume of EC-ICS that can be created during any Year under this Exhibit is limited to that volume of water conserved by irrigation efficiency measures in WMIDD's service area, calculated as described below in section VIII — for example, 48,313 AF in calendar year 2022 — and by which WMIDD reduces its use of Colorado River water from the amount which would otherwise be approved by the Bureau of Reclamation.

VII. Limitations on the ICS Creation Amount:

The volume of water conserved annually pursuant to this Exhibit, and which is devoted to the creation of EC-ICS, is further limited to the quantities set forth below and in the Framework Agreement Among the United States, the State of Arizona, and the Central Arizona Water Conservation District for an Arizona ICS Program ("Arizona ICS Framework Agreement").[45]

First, the maximum amount of EC-ICS that WMIDD may create in any Year pursuant to this Exhibit is limited to the amount of Colorado River water that, if added to its consumptive use in that Year, would not result in an Inadvertent Overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.

[45] *See* Arizona ICS Framework Agreement, art. 6–7, https://new.azwater.gov/sites/default/files/AZ_ICS_Framework_Agreement.pdf.

Second, the total amount of annual EC-ICS created by this program is limited to the amount of water that would have been delivered to WMIDD for beneficial use from the Colorado River, and in any event shall not exceed 10,000 AF/year for storage in Lake Mead and shall not exceed 20,000 AF in the aggregate.

VIII. Quantification Methodology:

The amount of water conserved by the efficiency measures described in this Exhibit and eligible to be credited to WMIDD as EC-ICS during any Year will be calculated as the difference between the District's average per-acre consumptive water use ("APAU") in 1990 and its APAU for such Year, adjusted for its total irrigable acreage ("TIA") in the same Year, as shown in Equation 1 below.[46] Equation 1 uses 2022 as the Year of ICS creation as an example, though the District anticipates the total conservation will remain relatively steady in the coming years.

Equation 1:

$$Conservation_{2022} = (APAU_{1990} \times TIA_{2022}) - (APAU_{2022} \times TIA_{2022}) = \text{AF conserved}$$

$$Conservation_{2022} = (4.86\ \text{AF/acre} \times 62{,}744\ \text{acres}) - (4.09\ \text{AF/acre} \times 62{,}744\ \text{acres}) = 48{,}313\ \text{AF}$$

The year 1990 is used as the baseline because that year was a significant turning point for water efficiency within the District. Starting especially in the 1990s, growers throughout the Yuma area began transitioning away from perennial and full-season crops like citrus, cotton, and alfalfa to multi-crop production systems that include a winter vegetable crop and a shorter-season summer crop like wheat or melons. Growers also began to invest heavily in the water efficiency practices described in this Exhibit.[47]

As a result, consumptive water use by growers in the Yuma area has decreased greatly since 1990, by an average of 15% or 0.8 AF/acre.[48] This reduction would not have happened without extraordinary and costly choices to implement the efficiency measures described in this Exhibit year after year. Absent such choices, WMIDD's beneficial use of Colorado River water each year would be significantly greater.

APAU for a given Year is calculated as the District's total consumptive water use ("CU") in that Year divided by its TIA in that Year, as shown in Equation 2.[49] Once again, 2022 is used as the relevant year of ICS creation as an example; the calculation for 1990 is also shown.

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[46] *See* LBOps ICS Exhibit W, *supra* note 10, at 2 (calculating the total amount of EC-ICS credited to SNWA through municipal conservation and offstream storage measures in a similar manner).

[47] *See id.* at 1–2 (explaining the use of a 2002 baseline for SNWA's EC-ICS calculations).

[48] *See* YUMA CNTY. AGRIC. WATER COALITION, *supra* note 1, at 17. For WMIDD, the average reduction in consumptive use of 0.8 AF/acre translates to total estimated water savings of about 50,000 AF for all irrigable acreage within the District.

[49] *Cf.* LBOps ICS Exhibit W, *supra* note 10, at 2 (similarly calculating net per capita consumptive water use within SNWA's service area for purposes of its EC-ICS calculations).

Equation 2:

$APAU_{2022} = CU_{2022} \,/\, TIA_{2022} = \text{AF/acre}$

$APAU_{2022} = 256{,}421 \text{ AF} \,/\, 62{,}744 \text{ acres} = 4.09 \text{ AF/acre}$

$APAU_{1990} = CU_{1990} \,/\, TIA_{1990} = \text{AF/acre}$

$APAU_{1990} = 315{,}637 \text{ AF} \,/\, 65{,}000 \text{ acres} = 4.86 \text{ AF/acre}$

Alternatively, the District's total conservation each year owing to the efficiency practices described above can be calculated by comparing water use in 1990 to the present day, adjusting for total cropped acreage ("TCA")[50] instead of TIA. Using the same equations, this results in estimated total conservation of 102,239 AF. This figure reveals the extent to which growers within WMIDD have drastically increased their output while still using less water than before. Since 1990, multi-cropped acreage in WMIDD has nearly doubled. Over the same period, consumptive water use dropped more than 60%. Using TCA to calculate conservation shows that growers are doing more with less water. Still, WMIDD proposes calculating its conservation using TIA instead of TCA so its yearly creation of EC-ICS is more predictable.[51]

In any event, section VI above reflects that the total amount of conservation that results from applying these two equations in any given Year will not necessarily be eligible to be credited to WMIDD as EC-ICS. Rather, the amount of EC-ICS created under this Exhibit is limited to the amount of water that would have been delivered to WMIDD for beneficial use from the Colorado River, and in any event shall not exceed 10,000 AF per year for storage in Lake Mead and shall not exceed 20,000 AF in the aggregate.

IX. Verification Methodology:

In accordance with Section 3.D.1 of the 2007 Interim Guidelines, in the Year immediately following the Year of creation of EC-ICS under this Exhibit, WMIDD will submit a Certification Report for the Secretary's review containing appropriate information to demonstrate the amount of EC-ICS created under this Exhibit in that Year and that the method of creation was consistent with this Exhibit, an approved EC-ICS Plan of Creation, and a Delivery Agreement with the United States of America.

Each Certification Report will describe the irrigation efficiency practices implemented by the District's growers in the relevant Year. Where appropriate, the Reports will also indicate the approximate number of acres, or a percentage of total acreage, on which each practice was used. The District will verify this information by canvassing its growers and, where feasible, by providing photographic and other evidence of each practice's implementation. The Bureau can

[50] TCA is the sum of the District's commercial acreage and multi-cropped acreage. *See* WMIDD Crop Census Reports for 2020–2022, *on file with WMIDD*.

[51] Unlike irrigable acreage, which has stayed the same since the 1990s, cropped acreage varies slightly over time. This variance would impact the results of Equations 1 and 2 in each year.

also verify this information by comparing the District's annual Part 417 questionnaires and Form 2-7045 crop census reports to the Reports.

To confirm the amount of water saved by extraordinary conservation measures under this Exhibit, the Bureau may use the equations provided above. WMIDD's CU as of 1990 and in the relevant Year of ICS creation should be determined according to the Bureau's Article V Colorado River Accounting and Water Use Reports for those years.[52] And its TIA for each year should be determined according to its respective crop census reports.[53] For the Bureau's convenience, these documents will be attached to WMIDD's Certification Reports.

As for the amount of EC-ICS created because of such extraordinary conservation, WMIDD will claim the maximum amount of EC-ICS credits permitted under this Exhibit and other governing documents. Thus, if the result of Equation 1 is greater than or equal to the maximum amount of EC-ICS that can be created under this Exhibit, the amount of EC-ICS to be credited to WMIDD will be the same as the maximum.[54] Conversely, if the result of Equation 1 is less than the maximum allowed, the amount of EC-ICS to be credited to WMIDD will be equal to the result of Equation 1.[55] Both possible results are represented with if-then statements below as Equation 3.

Equation 3:

$$If\ Conservation \geq Maximum\ EC\text{-}ICS, then\ EC\text{-}ICS = Maximum\ EC\text{-}ICS$$

$$But\ if\ Conservation < Maximum\ EC\text{-}ICS, then\ EC\text{-}ICS = Conservation$$

X. Certification:

As noted in section IX, pursuant to Section 3.D.1 of the 2007 Interim Guidelines, in the Year immediately following the Year of creation of EC-ICS under this Exhibit, WMIDD will submit a Certification Report for the Secretary's review containing appropriate information to demonstrate the amount of EC-ICS created under this Exhibit and that the method of creation was consistent with this Exhibit, an approved ICS Plan of Creation, and a Delivery Agreement with the United States of America.

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[52] *See, e.g.*, BUREAU OF RECLAMATION, COMPILATION OF RECORDS IN ACCORDANCE WITH ARTICLE V OF THE DECREE OF THE SUPREME COURT OF THE UNITED STATES IN ARIZONA V. CALIFORNIA DATED MARCH 9, 1964, at 10 (1990), https://www.usbr.gov/lc/region/g4000/4200Rpts/DecreeRpt/1990DecreeRpt.pdf; BUREAU OF RECLAMATION, COLORADO RIVER ACCOUNTING AND WATER USE REPORT: ARIZONA, CALIFORNIA, AND NEVADA, at 16 (2022), https://www.usbr.gov/lc/region/g4000/4200Rpts/DecreeRpt/2022/2022.pdf.

[53] *See, e.g.*, WMIDD Crop Census Reports for 1990 and 2022, *on file with WMIDD*.

[54] For instance, in 2022, assuming total conservation of 48,313 AF, WMIDD would have created 10,000 AF of EC-ICS, the maximum allowable under this Exhibit.

[55] For instance, if WMIDD conserves a total of 9,000 AF in 2025, it will create 9,000 AF of EC-ICS.

WMIDD acknowledges that, in accordance with Section 2.5 B of the Forbearance Agreement, the Secretary shall verify information in a Certification Report in consultation with the Lower Division States, and provide a final written decision as to the amount of EC-ICS created, which decision may be appealed by WMIDD or any party, as provided in Section 3.D.2 of the 2007 Interim Guidelines.

XI. Delivery:

EC-ICS created under this Exhibit shall be delivered in accordance with a Delivery Agreement between the United States of America and WMIDD, subject to a maximum annual delivery volume of 10,000 AF, or the total ICS volume created under this Exhibit and remaining undelivered, whichever is less.

XII. Reclamation Authority:

Reclamation Act of 1902, 32 Stat. 388, as amended and supplemented, including in particular, Boulder Canyon Project Act, 45 Stat. 1057, Act of March 4, 1921, 41 Stat. 1404, Act of January 21, 1927, 44 Stat. 1010, chapter 47, designated the Colorado River Front Work and Levee System, as amended, and P.L. 109-342, 120 Stat. 2922 § 396.

XIII. Counterparts:

This Exhibit may be executed in counterparts, each of which shall be an original and all of which, together, shall constitute only one Exhibit AE.

[SIGNATURES APPEAR ON FOLLOWING PAGES]

In Witness of this Exhibit AE to the Forbearance Agreement executed on December 13, 2007, the Parties affix their official signatures below, acknowledging approval of this document on this ____ day of _____, 20__.

Approved as to form:

THE STATE OF ARIZONA acting through the ARIZONA DEPARTMENT OF WATER RESOURCES

By: _____
Nicole Klobas
Chief Counsel

By: _____
Thomas Buschatzke
Director

Attest:

PALO VERDE IRRIGATION DISTRICT

By: _____
J.R. Echard
General Manager

By: _____
Bart Fisher
Board President

Attest and Approved:

IMPERIAL IRRIGATION DISTRICT

By: _____
Geoffrey Holbrook
General Counsel

By: _____
Alex Cardenas
President

Approved as to form:

THE CITY OF NEEDLES

By: _____
John Pinkney
City Attorney

By: _____
Janet Jernigan
Mayor

Approved as to form:

COACHELLA VALLEY WATER DISTRICT

By: _____
Jeff Ferre
General Counsel

By: _____
Jim Barrett
General Manager

Approved as to form:

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Marcia Scully
General Counsel

By: _____
Adel Hagekhalil
General Manager

Approved as to form:

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Gregory Walch
General Counsel

By: _____
John Entsminger
General Manager

Approved as to form:

COLORADO RIVER COMMISSION OF NEVADA

By: _____
Aaron Ford
Nevada Attorney General

By: _____
Eric P. Witkoski
Executive Director

Washington on the structure and implementation of the Yakima River Basin Water Conservation Program. In consultation with the State, the Yakama Nation, Yakima River basin irrigators, and other interested and related parties, six members are appointed to serve on the CAG.

The basin conservation program is structured to provide economic incentives with cooperative Federal, State, and local funding to stimulate the identification and implementation of structural and nonstructural cost-effective water conservation measures in the Yakima River basin. Improvements in the efficiency of water delivery and use will result in improved streamflows for fish and wildlife and improve the reliability of water supplies for irrigation.

FOR FURTHER INFORMATION CONTACT: Ms. Dawn Wiedmeier, Deputy Area Manager, Yakima River Basin Water Enhancement Program, telephone 509–575–5848, extension 213.

Certification

I hereby certify that Charter renewal of the Yakima River Basin Conservation Advisory Group is in the public interest in connection with the performance of duties imposed on the Department of the Interior.

Dirk Kempthorne,

Secretary of the Interior.

[FR Doc. E8–7728 Filed 4–10–08; 8:45 am]

BILLING CODE 4310–MN–P

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead

AGENCY: Bureau of Reclamation, Interior.

ACTION: Notice of Availability of the Record of Decision for the adoption of Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead.

SUMMARY: The Department of the Interior, acting through the Bureau of Reclamation, published a **Federal Register** notice on November 2, 2007 (72 FR 62272) which informed the public of the availability of the final environmental impact statement on the proposed adoption of specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address the operations of Lake Powell and Lake Mead, particularly under low reservoir conditions, through 2026. We are now notifying the public that the Secretary of the Interior signed the Record of Decision (ROD) on December 13, 2007. The text of the ROD is found below.

FOR FURTHER INFORMATION CONTACT: Terrance J. Fulp, Ph.D., at (702) 293–8500 or e-mail at *strategies@lc.usbr.gov;* and/or Randall Peterson at (801) 524–3633 or e-mail at *strategies@lc.usbr.gov.*

The ROD is electronically available on Reclamation's project Web site at: *http://www.usbr.gov/lc/region/programs/strategies.html.* Alternatively, a compact disc or hard copy is available upon written request to: Regional Director, Lower Colorado Region, Bureau of Reclamation, Attention: BCOO–1005, P.O. Box 61470, Boulder City, Nevada 89006–1470; fax at (702) 293–8156; or e-mail at *strategies@lc.usbr.gov.*

Dated: March 28, 2008.

Dirk Kempthorne,

Secretary, Department of the Interior.

Record of Decision; Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (December 2007)

Recommending Official: Robert Johnson, Commissioner, Bureau of Reclamation, December 13, 2007.

Approved: Dirk Kempthorne, Secretary of the Department of the Interior, December 13, 2007.

Record of Decision; Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead Final Environmental Impact Statement (November 2007)

I. Introduction

The Colorado River Basin (Basin) is in the eighth year of drought—the worst eight-year period in over a century of continuous recordkeeping. Reservoir elevations have declined over this period and the duration of this ongoing, historic drought is unknown. This is the first long-term drought in the modern history of the Colorado River, although climate experts and scientists suggest droughts of this severity have occurred in the past and are likely to occur in the future. The Colorado River provides water to two nations, and to users within seven western states. With over 27 million people relying on the Colorado River for drinking water in the United States, and over 3.5 million acres of farmland in production in the Basin, the Colorado River is the single most important natural resource in the Southwest.

The Secretary of the Interior (Secretary) has a unique role on the Colorado River—charged with management of a vast system of dams and reservoirs that have provided water for the development of the Southwest.

Under these conditions, conflict over water is unsurprising and anticipated. Declining reservoir levels in the Basin led to interstate and inter-basin tensions. As the agency charged with management of the Colorado River, the Department of the Interior (Department) had not yet developed operational rules for the full range of operations at Lake Powell and Lake Mead because these types of low-reservoir conditions had simply not yet occurred.

Against this background, at the direction of the Secretary, the Department initiated a public process in May of 2005 to develop additional operational guidelines and tools to meet the challenges of the drought in the Basin. While water storage in the massive reservoirs afforded great protection against the drought, the Department set a goal to have detailed, objective operational tools in place by the end of 2007 in order to be ready to make informed operational decisions if the reservoirs continued to decline.

During the public process, a unique and remarkable consensus emerged in the basin among stakeholders including the Governor's representatives of the seven Colorado River Basin States (Basin States). This consensus had a number of common themes: encourage conservation, plan for shortages, implement closer coordination of operations of Lake Powell and Lake Mead, preserve flexibility to deal with further challenges such as climate change and deepening drought, implement operational rules for a long—but not permanent—period in order to gain valuable operating experience, and continue to have the federal government facilitate—but not dictate—informed decision-making in the Basin.

Today, this Record of Decision (ROD) constitutes the Department's final decision after facilitating, analyzing, and considering public input over the past two and one-half years, during which the ongoing drought continued to focus nationwide attention on the Basin. A broad range of considerations have been analyzed, involving water supply, environmental protection, hydropower production, and recreation—all benefits that flow from the management of the Colorado River.

This document is the ROD of the Department of the Interior, regarding the Preferred Alternative for Colorado River

Interim Guidelines for Lower Basin Shortages and Coordinated Operations of Lake Powell and Lake Mead (Guidelines). The Secretary is vested with the responsibility of managing the mainstream waters of the lower Colorado River pursuant to federal law. This responsibility is carried out consistent with applicable federal law.

The Bureau of Reclamation (Reclamation), the agency that is designated to act on the Secretary's behalf with respect to these matters, is the lead federal agency for the purposes of the National Environmental Policy Act. The Final Environmental Impact Statement—*Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, dated October 2007 (FES–07–37) (Final EIS), was prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended, the Council on Environmental Quality's (CEQ's) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] parts 1500 through 1508), Department of the Interior Policies, and Reclamation's NEPA Handbook. The Final EIS was filed with the Environmental Protection Agency (EPA) on October 26, 2007 and noticed by EPA (72 FR 62229) and Reclamation (72 FR 62272) in the **Federal Register** on November 2, 2007.

The Final EIS was prepared by Reclamation to address the formulation and evaluation of specific interim guidelines for shortage determinations and coordinated reservoir operations, and to identify the potential environmental effects of implementing such guidelines. The Final EIS addresses the environmental issues associated with, and analyzes the environmental consequences of various alternatives for specific interim guidelines. The alternatives addressed in the Final EIS are those Reclamation determined would meet the purpose of and need for the federal action and represented a broad range of the most reasonable alternatives.

The Bureau of Indian Affairs (BIA), Fish and Wildlife Service (FWS), National Park Service (NPS), Western Area Power Administration (Western) and the United States Section of the International Boundary and Water Commission (USIBWC) are cooperating agencies for purposes of assisting with the environmental analysis in the Final EIS.

The BIA has responsibility for the administration and management of lands held in trust by the United States for American Indians (Indian) and Indian tribes located within the Basin. Developing forestlands, leasing assets on these lands, directing agricultural programs, protecting water and land rights, developing and maintaining infrastructure, and economic development are all part of the BIA's responsibility.

FWS manages four national wildlife refuges along the Colorado River. Among its many other key functions, the FWS administers and implements federal wildlife laws, protects endangered species, manages migratory birds, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and assists foreign governments with international conservation efforts.

The NPS administers areas of national significance along the Colorado River, including Glen Canyon National Recreation Area, Grand Canyon National Park, and Lake Mead National Recreation Area. The NPS conserves natural and cultural resources and administers visitor use, and also grants and administers concessions for the operation of marinas and other recreation facilities at Lake Powell and Lake Mead, as well as concessions' operations along the Colorado River between Glen Canyon Dam and Lake Mead.

Western markets and transmits power generated from the various hydropower plants located within the Basin operated by Reclamation. Western customers include municipalities, cooperatives, public utility and irrigation districts, federal and state agencies, investor-owned utilities, and Indian tribes located throughout the Basin.

The USIBWC is the United States component of a bi-national organization responsible for administration of the provisions of the February 3, 1944 Treaty between the United States and Mexico Relating to the Utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande (1944 Treaty), which includes the Colorado River waters allotted to Mexico, protection of lands along the Colorado River from floods by levee and floodway construction projects, resolution of international boundary water sanitation and other water quality problems, and preservation of the Colorado River as the international boundary. The International Boundary and Water Commission (IBWC) consists of the United States Section and the Mexican Section, which have their headquarters in the adjoining cities of El Paso, Texas and Ciudad Juarez, Chihuahua, respectively.

II. Decision

The recommendation is the approval of the following federal action: The adoption of specific interim guidelines for Lower Basin shortages and coordinated operations of Lake Powell and Lake Mead, as provided below in Section XI. These interim Guidelines are based upon the Preferred Alternative analyzed in the Final EIS, and include several operational refinements as a result of public input, described below in Section VII. The interim Guidelines would be used each year by the Department in implementing the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968 (Long-Range Operating Criteria or Operating Criteria or LROC), through issuance of the Annual Operating Plan for Colorado River Reservoirs (AOP). The Guidelines would remain in effect for determinations to be made through 2025 regarding water supply and reservoir operating decisions through 2026, as provided below in Section 8 of the Guidelines.

The Preferred Alternative proposes:

- Discrete levels of shortage volumes associated with Lake Mead elevations to conserve reservoir storage and provide water users and managers in the Lower Basin with greater certainty to know when, and by how much, water deliveries will be reduced in drought and other low reservoir conditions;
- A coordinated operation of Lake Powell and Lake Mead determined by specified reservoir conditions that would minimize shortages in the Lower Basin and avoid the risk of curtailments in the Upper Basin;
- A mechanism to encourage and account for augmentation and conservation of water supplies, referred to as Intentionally Created Surplus (ICS), that would minimize the likelihood and severity of potential future shortages; and
- The modification and extension of the Interim Surplus Guidelines (66 Fed. Reg. 7772, Jan 25, 2001) (ISG) through 2026.

III. Background

The Secretary, acting through Reclamation, is responsible for water management throughout the western United States. Reclamation's authority is limited throughout the west by the limiting provisions of Reclamation law, beginning with the Reclamation Act of 1902.

The Secretary also has a broader and unique legal role as he manages the lower Colorado River system in

accordance with federal law, including the Boulder Canyon Project Act of 1928, the 1963 Decision of the U.S. Supreme Court in Arizona v. California, the 2006 Consolidated Decree of the U.S. Supreme Court in Arizona v. California (Consolidated Decree), the Colorado River Basin Project Act of 1968 (CRBPA), the LROC, and the Grand Canyon Protection Act of 1992, and other applicable provisions of federal law. Within this legal framework, the Secretary makes annual determinations regarding the availability of water from Lake Mead by considering various factors, including the amount of water in system storage and predictions for natural runoff. The CRBPA directed the Secretary to propose and adopt criteria: ''In order to comply with and carry out the provisions of the Colorado River Compact, the Upper Colorado River Basin Compact, and the Mexican Water Treaty, * * * for the coordinated long-range operation of the reservoir constructed and operated under the authority of the Colorado River Storage Project Act, the Boulder Canyon Project Act, and the Boulder Canyon Project Adjustment Act.''

Pursuant to the CRBPA, the narrative provisions of LROC are utilized by the Secretary, on an annual basis, to make determinations with respect to the projected plan of operations of the storage reservoirs in the Basin. The AOP is prepared by Reclamation, acting on behalf of the Secretary, in consultation with representatives of the Basin States and other parties, as required by federal law. In the AOP, with respect to operations of Hoover Dam, the Secretary is required to determine when Normal, Surplus, or Shortage conditions occur in the lower Colorado River, based on various factors including storage and hydrologic conditions in the Basin.

As described in the Final EIS:

• A ''Normal Condition'' exists when the Secretary determines that sufficient mainstream water is available to satisfy 7.5 million acre-feet (maf) of annual consumptive use in the Lower Division states (Arizona, California, and Nevada). If a state will not use all of its apportioned water for the year, the Secretary may allow other states of the Lower Division to use the unused apportionment, provided that the use is authorized by a water delivery contract with the Secretary.

• A ''Surplus Condition'' exists when the Secretary determines that sufficient mainstream water is available for release to satisfy consumptive use in the Lower Division states in excess of 7.5 maf annually. The water available for excess consumptive use is surplus and is distributed for use in Arizona, California, and Nevada pursuant to the terms and conditions provided in the ISG. The current provisions of the ISG are scheduled to terminate in 2016. In general terms, the ISG link the availability of surplus water to the elevation of Lake Mead. When Lake Mead is full and Reclamation is making flood control releases, surplus supplies are unlimited. As Lake Mead's elevation drops, surplus water amounts are reduced, and ultimately eliminated. The ISG also link surplus availability to continued progress by California in reducing its agricultural use of water to benchmarks established in the ISG. If a state does not use all of its apportioned water for the year, the Secretary may allow other Lower Division states to use the unused apportionment, provided that the use is authorized by a water delivery contract with the Secretary.

• A ''Shortage Condition'' exists when the Secretary determines that insufficient mainstream water is available to satisfy 7.5 maf of annual consumptive use in the Lower Division states. To date, the Secretary has never made such a determination, as flow in the Colorado River has been sufficient to meet Normal or Surplus delivery amounts. When making a shortage determination, the Secretary must consult with various parties as set forth in the Consolidated Decree and consider all relevant factors as specified in the LROC, including 1944 Treaty obligations, the priorities set forth in the Consolidated Decree, and the reasonable consumptive use requirements of mainstream water users in the Lower Division states. If a state does not use all of its apportioned water for the year, the Secretary may allow other Lower Division states to use the unused apportionment, provided that the use is authorized by a water delivery contract with the Secretary.

As discussed above, during the period from 2000 to 2007, the Colorado River has experienced the worst drought conditions in approximately one hundred years of recorded history. This drought in the Basin has reduced Colorado River system storage, while demands for Colorado River water supplies have continued to increase. From October 1, 1999 through September 30, 2007, storage in Colorado River reservoirs fell from 55.8 maf (approximately 94 percent of capacity) to 32.1 maf (approximately 54 percent of capacity), and was as low as 29.7 maf (approximately 52 percent of capacity) in 2004. This drought was the first sustained drought experienced in the Basin at a time when all major storage facilities were in place, and when use by the Lower Division states met or exceeded the annual ''normal'' apportionment of 7.5 maf pursuant to Article II(B)(1) of the Consolidated Decree.

Currently, the Department does not have specific operational guidelines in place to address the operations of Lake Powell and Lake Mead during drought and low reservoir conditions. To date, storage of water and flows in the Colorado River have been sufficient so that it has not been necessary to reduce Lake Mead annual releases below 7.5 maf; that is, the Secretary has never reduced deliveries by declaring a ''shortage'' on the lower Colorado River. Without operational guidelines in place, however, water users in the Lower Division states who rely on Colorado River water are not currently able to identify particular reservoir conditions under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Lower Division states below 7.5 maf. Nor are these water users able to identify the frequency or magnitude of any potential future annual reductions in their water deliveries.

Accordingly, the Secretary, acting through Reclamation, proposes adoption of specific Colorado River Lower Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead, particularly under drought and low reservoir conditions. These Guidelines are found at Section XI of this ROD. This action is proposed in order to provide a greater degree of certainty to United States Colorado River water users and managers of the Basin by providing detailed, and objective guidelines for the operations of Lake Powell and Lake Mead, thereby allowing water users in the Lower Basin to know when, and by how much, water deliveries will be reduced in drought and other low reservoir conditions.

The Secretary has also determined the desirability of developing additional operational guidelines that will provide for releases greater than or less than 8.23 maf from Lake Powell. To further enhance this coordinated reservoir approach, the Secretary has determined a need for guidelines that provide water users in the Lower Division states the opportunity to conserve and take delivery of water in and from Lake Mead for the purposes of enhancing existing water supplies, particularly under low reservoir conditions. In addition, the Secretary has determined the need to modify and extend the ISG to coincide with the duration of the proposed new Guidelines. This will provide an integrated approach for reservoir management and more

predictability for future Lower Division water supplies.

IV. Alternatives Considered

The purpose of the proposed federal action is to:

- Improve Reclamation's management of the Colorado River by considering trade-offs between the frequency and magnitude of reductions of water deliveries, and considering the effects on water storage in Lake Powell and Lake Mead, and on water supply, power production, recreation, and other environmental resources;
- Provide mainstream United States users of Colorado River water, particularly those in the Lower Division states, a greater degree of predictability with respect to the amount of annual water deliveries in future years, particularly under drought and low reservoir conditions; and
- Provide additional mechanisms for the storage and delivery of water supplies in Lake Mead to increase the flexibility of meeting water use needs from Lake Mead, particularly under drought and low reservoir conditions.

This proposed federal action considers four operational elements that collectively are designed to address the purpose and need for the proposed federal action. The interim Guidelines would be used by the Secretary to:

- Determine those circumstances under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Colorado River Lower Division states below 7.5 maf (a ''Shortage'') pursuant to Article II(B)(3) of the Consolidated Decree;
- Define the coordinated operation of Lake Powell and Lake Mead to provide improved operation of these two reservoirs, particularly under low reservoir conditions;
- Allow for the storage and delivery, pursuant to applicable federal law, of conserved Colorado River system and non-system water in Lake Mead to increase the flexibility of meeting water use needs from Lake Mead, particularly under drought and low reservoir conditions; and
- Determine those conditions under which the Secretary may declare the availability of surplus water for use within the Lower Division states. The proposed federal action would modify the substance of the existing ISG and the term of the ISG from 2016 through 2026.

Six alternatives are considered and analyzed in the Final EIS. The alternatives consist of a No Action Alternative and five action alternatives. The five action alternatives are: Basin States Alternative, Conservation Before Shortage Alternative, Water Supply Alternative, Reservoir Storage Alternative, and the Preferred Alternative. The action alternatives reflect input from Reclamation staff, the cooperating agencies, stakeholders, and other interested parties.

Reclamation received two written proposals for alternatives that met the purpose and need of the proposed federal action, one from the Basin States and another from a consortium of environmental non-governmental organizations (NGO). These proposals were used by Reclamation to formulate two of the alternatives considered and analyzed in the Final EIS (Basin States Alternative and Conservation Before Shortage Alternative). A third alternative (Water Supply Alternative) was developed by Reclamation, and a fourth alternative (Reservoir Storage Alternative) was developed by Reclamation in coordination with the NPS and Western. The No Action Alternative and the action alternatives analyzed in the Draft EIS were posted on Reclamation's project Web site (*http://www.usbr.gov/lc/region/programs/strategies.html*) on June 30, 2006.

A fifth alternative, the Preferred Alternative, was developed (and included in the Final EIS) after consideration of the comments received on the Draft EIS and further analysis. The Preferred Alternative was posted on Reclamation's project Web site on June 15, 2007 and is composed of operational elements from the action alternatives identified and analyzed in the Draft EIS.

The Preferred Alternative is the most reasonable and feasible alternative; all environmental effects of this alternative, as well as the No Action Alternative and the remaining four action alternatives have been fully analyzed in the Final EIS. The identified environmental effects of the Preferred Alternative are well within the range of anticipated effects of the alternatives presented in the Draft EIS and do not affect the environment in a manner not already considered in the Draft EIS.

Reclamation identified the Preferred Alternative and the Conservation Before Shortage Alternative as the environmentally preferred alternatives, as provided in 50 CFR 1505.2. The combination of the ICS mechanism and the coordinated operations between Lake Powell and Lake Mead maintains and enhances water supply and environmental benefits at both reservoirs. In addition, these alternatives strike an appropriate balance between the storage of water for future deliveries and the lack of disruption of near-term water deliveries.

Reclamation selected from among the four key operational elements disclosed in the Draft EIS to formulate the Preferred Alternative. Reclamation has determined that the four operational elements selected under this alternative best meet all aspects of the purpose and need of the proposed federal action.

A. No Action Alternative

The No Action Alternative represents a projection of future conditions that could occur during the life of the proposed federal action without an action alternative being implemented. It provides a baseline for comparison of each of the action alternatives.

Pursuant to LROC, the Secretary makes a number of determinations at the beginning of each operating year through the development and execution of the AOP, including the water supply available to users in the Lower Basin and the annual release from Lake Powell. However, the LROC currently does not include specific guidelines for such determinations. Furthermore, there is no actual operating experience under low reservoir conditions, i.e., there has never been a shortage determination in the Lower Basin. Therefore, in the absence of specific guidelines, the outcome of the annual determination in any particular year in the future cannot be precisely known. However, a reasonable representation of future conditions under the No Action Alternative is needed for comparison to each action alternative. The modeling assumptions used for this representation are consistent with the assumptions used in previous environmental compliance documents for the ISG, the Colorado River Water Delivery Agreement, and the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). However, the assumptions used in the No Action Alternative are not intended to limit or predetermine these decisions in any future AOP determination.

B. Basin States Alternative

The Basin States Alternative was developed by the Basin States and proposes a coordinated operation of Lake Powell and Lake Mead that would minimize shortages in the Lower Basin and avoid risk of curtailments of Colorado River water use in the Upper Basin. This alternative includes shortages to conserve reservoir storage; coordinated operations of Lake Powell and Lake Mead determined by specified reservoir conditions; a mechanism for the creation, accounting, and delivery of conserved system and non-system water (ICS); and a modification and extension of the ISG through 2026.

C. Conservation Before Shortage Alternative

The Conservation Before Shortage Alternative was developed by a consortium of environmental NGOs, and includes voluntary, compensated reductions (shortages) in water use to minimize involuntary shortages in the Lower Basin and to avoid risk of curtailments of Colorado River water use in the Upper Basin. This alternative includes voluntary shortages prior to involuntary shortages; coordinated operations of Lake Powell and Lake Mead determined by specified reservoir conditions; an expanded ICS mechanism for the creation, accounting, and delivery of conserved system and non-system water, including water for environmental uses; and modification and extension of the ISG through 2026. There are two aspects of the Conservation Before Shortage proposal that are unique to the Conservation Before Shortage Alternative: A funding mechanism for the voluntary conservation program, and a recommendation that a portion of the conserved water be used to benefit the environment. However, as noted in the Final EIS, the viability of the Conservation Before Shortage program funding proposal is not known at this time. The Department currently does not have the authority to implement all facets of this proposal and additional legislation would be necessary to gain such authority.

D. Water Supply Alternative

The Water Supply Alternative maximizes water deliveries at the expense of retaining water in storage in the reservoirs for future use. This alternative would reduce water deliveries only when insufficient water to meet entitlements is available in Lake Mead. When reservoir elevations are relatively low, Lake Powell and Lake Mead would share water (''balance contents''). This alternative does not include a mechanism for the creation, accounting, and delivery of conserved system and non-system water in Lake Mead. The existing ISG would be extended through 2026.

E. Reservoir Storage Alternative

The Reservoir Storage Alternative was developed in coordination with the cooperating agencies and other stakeholders, primarily Western and the NPS. This alternative would keep more water in storage in Lake Powell and Lake Mead by reducing water deliveries and by increasing shortages to retain more water in storage and thereby, benefit power and recreational interests. This alternative includes larger, more frequent shortages that serve to conserve reservoir storage; coordinated operations of Lake Powell and Lake Mead determined by specified reservoir conditions (more water would be held in Lake Powell than under the Basin States Alternative); and an expanded mechanism for the creation, accounting, and delivery of conserved system and non-system water in Lake Mead. The existing ISG would be terminated after 2007.

F. Preferred Alternative

The Preferred Alternative incorporates operational elements identified in the Basin States and Conservation Before Shortage alternatives. This alternative includes shortages to conserve reservoir storage and a coordinated operation of Lake Powell and Lake Mead determined by specified reservoir conditions that would minimize shortages in the Lower Basin and avoid risk of curtailments of use in the Upper Basin; and also adopts the ICS mechanism for promoting water conservation in the Lower Basin. It is anticipated that the maximum cumulative amount of ICS would be 2.1 maf pursuant to Section XI.D. of this ROD; however, the potential effects of a maximum cumulative amount of ICS of up to 4.2 maf have been analyzed in the Final EIS. This alternative also includes modification and extension of the ISG through 2026.[1]

V. Basis for Decision

In 2005, tensions among the Basin States brought the basin closer to multi-state and inter-basin litigation than perhaps any time since the adoption of the Compact. On May 2, 2005, in a decision of the Secretary, the Department outlined a number of fundamental considerations that would guide the NEPA process that concludes with the adoption of this ROD. These considerations include:

- Concern regarding the impacts of drought throughout the Colorado River Basin;
- A recognition of the recent history of close and productive working relationships among the Basin States;
- A belief that discussions among the states could facilitate the development of additional tools to improve coordinated operation of Colorado River reservoirs;
- A preference that operational strategies not be developed in the AOP setting, which is used by the Department to annually implement operational strategies that are developed through separate, public processes;
- An intention to develop operational tools that would avoid unnecessary, protracted or destabilizing litigation; and
- A commitment to continue to consult with and work with all stakeholders in the Basin.

In light of the severity of the drought, the Department announced its intention to complete the development of drought and low-reservoir operational tools by December 2007, and to do so through an open, public process. In closing, the Secretary expressed the opinion that ''all parties must work together to find creative solutions that will conserve reservoir storage and help to minimize the adverse effects of drought in the Colorado River Basin.''

The fundamental basis for this decision is that each of the above foundational considerations have been honored and achieved through the development of a consensus seven-state recommendation that has been incorporated, as appropriate, into the Preferred Alternative adopted herein today.

The Department selected the Preferred Alternative based on the Department's determination that it best meets all aspects of the purpose and need for the federal action, including: The need to remain in place for the extended period of the interim Guidelines; the desirability of the alternative based on the facilitated consensus recommendation from the Basin States; the likely durability of the mechanisms adopted in the Preferred Alternative in light of the extraordinary efforts that the Basin States and water users have undertaken to develop implementing agreements that will facilitate the water management tools (shortage sharing, forbearance, and conservation efforts)

[1] It is anticipated that elements of the decision adopted by this ROD will be implemented through a number of agreements. The following agreements are anticipated to be executed at or about the time of issuance of this ROD:

- Delivery Agreement between the United States and Imperial Irrigation District (IID)
- Delivery Agreement between the United States and The Metropolitan Water District of Southern California (MWD)
- Delivery Agreement between the United States, Southern Nevada Water Authority (SNWA) and the Colorado River Commission of Nevada (CRCN)
- Funding and Construction of the Lower Colorado River Drop 2 Storage Reservoir Project Agreement among the United States, SNWA, and CRCN
- Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement among the Arizona Department of Water Resources, the Southern Nevada Water Authority, CRCN, the Palo Verde Irrigation District (PVID), IID, Coachella Valley Water District (CVWD), MWD, and the City of Needles
- California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus among the PVID, IID, CVWD, MWD and the City of Needles.

identified in the Preferred Alternative; and the range of elements in the alternative that will enhance the Secretary's ability to manage the Colorado River reservoirs in a manner that recognizes the inherent tradeoffs between water delivery and water storage.

Importantly for the long-term stable management of the Colorado River, adoption of this decision activates a legal agreement among the Basin States that contains a critically important provision: The Basin States have agreed to mandatory consultation provisions to address future controversies on the Colorado River through consultation and negotiation, as a requirement, before resorting to litigation. With respect to the various interests, positions and views of each of the seven Basin States, this provision adds an important new element to the modern evolution of the legal framework for the prudent management of the Colorado River.

In recent years, in a number of settings, and facing a broad range of water management challenges, the Department has highlighted the important role of the Basin States in the statutory framework for administration of Basin entitlements and the significance that a seven-state consensus represents. Multi-state consensus is a rare and unique achievement that should continue to be recognized and facilitated.

With respect to the information within the scope of the proposed action, Reclamation concluded that the Preferred Alternative is a reasonable alternative and fully analyzed the environmental effects of this alternative in the Final EIS. The identified environmental effects of the Preferred Alternative are well within the range of anticipated effects of the alternatives presented in the Draft EIS and do not affect the environment in a manner not already considered in the Draft EIS. Thus, based on all available information, this alternative is the most reasonable, feasible, implementable, and durable alternative.

Drought is not limited to the Southwest, nor are interstate tensions over water management. As a final basis for this decision, the Department believes that a model for interstate cooperation can be found in the elements of the Preferred Alternative adopted today.

VI. Public Response to the Final Environmental Impact Statement

Following the **Federal Register** Notice of Availability of the Final EIS on November 2, 2007, and as of 8 p.m. (EST), Tuesday, December 11, 2007, Reclamation received six comment letters on the Final EIS and the updated draft Interim Operational Guidelines for Lake Powell and Lake Mead posted November 16, 2007 on Reclamation's project Web site. After appropriate consideration, the Department concludes that the comments received do not identify or raise any significant issues that would require supplementing the Final EIS. The major issues noted in the comment letters are summarized below:

The Basin States submitted a letter expressing their appreciation to Reclamation and Department staff for their diligence in working with the Basin States and others in developing the draft Guidelines for Lake Powell and Lake Mead; and they further stated that the adoption of the Guidelines ''represent a significant and historic milestone, reflecting the continuation of the consultative approach to river management between the federal government and affected states on the Colorado River.''

The San Diego County Water Authority submitted a comment letter fully supporting the statements in the Basin States' letter to the Secretary on the Final EIS. The Authority also noted their concern that the proposed implementation of Guidelines, specifically ICS, should not inadvertently conflict with the implementation of certain terms of October 10, 2003 Allocation Agreement. The Department agrees that the creation, release, or delivery of ICS or the declaration of an ICS Surplus Condition in a calendar year shall not constitute a determination by the Secretary of the existence of surplus Colorado River water in that calendar year for the purposes of Section 9.2.2 of the Allocation Agreement Among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido and Vista Irrigation District, dated October 10, 2003. This understanding has also been expressly stated in the proposed Delivery Agreements for IID and MWD (Section V of this ROD).

The EPA submitted a comment letter noting it had no objections to the proposed project and some of the details of the Final EIS pertinent to their views. Further, EPA encouraged Reclamation to ''play an active role in facilitating comprehensive water management among all water sectors in the Basin.'' Reclamation intends to continue to pursue its mission in the 17 western states, and in particular on the Colorado River, to assist in meeting the increasing water demands of the West while protecting the environment and the public's investment in these structures. Reclamation places great emphasis on fulfilling its water delivery obligations, water conservation, water recycling and reuse, and developing partnerships with our customers, states, and Native American Tribes, and in finding ways to bring together the variety of interests to address the competing needs for our limited water resources.

The Colorado River Board of California submitted comments on behalf of its member agencies on the updated draft Guidelines. The majority of the comments were editorial and to the extent the individual comments improved the clarity of the Guidelines they were incorporated into the Guidelines found in Section XI of this ROD.

A comment letter dated November 12, 2007, was received from a single member of the public and noted his concern that the terms of the Biological Opinion (BO) should be met and that impacts due to climate change on ''listed fish and birds'' are addressed. FWS issued the BO on the Preferred Alternative described in this ROD on December 12, 2007. Reclamation has agreed to implement Conservation measures to benefit the listed species addressed in the BO and comply with the terms and conditions of the incidental take statement in the BO. Acknowledging the potential for impacts due to climate change and increased hydrologic variability, the Secretary proposes that the Guidelines be interim in duration and extend through 2026, providing the opportunity to gain valuable operating experience for the management of Lake Powell and Lake Mead, particularly for low reservoir conditions, and improve the basis for making additional future operational decisions, whether during the Interim Period (Section 8 of the Guidelines) or thereafter. In addition, the Preferred Alternative has been crafted to include operational elements that would respond if potential impacts of climate change and increased hydrologic variability are realized. In particular, the Preferred Alternative includes a coordinated operation element that allows for the adjustment of Lake Powell's release to respond to low reservoir storage conditions in Lake Powell or Lake Mead as described in Section 2.7 and Section 2.3 in the Final EIS. In addition, the Preferred

Alternative will enhance conservation opportunities in the Lower Basin and the retention of water in Lake Mead through adoption of the ICS mechanism. Finally, the Preferred Alternative includes a shortage strategy at Lake Mead that would result in additional shortages being considered, after appropriate consultation, if Lake Mead elevations drop below 1,025 feet mean sea level (msl).

The Defenders of Wildlife submitted a comment letter dated December 11, 2007, on behalf of their organization, the National Wildlife Federation, the Pacific Institute, and the Sierra Club regarding the updated draft Guidelines. The comments are limited to information that was published in Appendix S of the Final EIS dated November 2, 2007. The letter offers a number of clarifying comments, raises concerns regarding the appropriate mechanisms for consultation between federal and non-federal parties, and raises detailed comments regarding the implementation of the ICS and Developed Shortage Supply (DSS) components of the Guidelines. Reclamation thoroughly reviewed the comments submitted and concluded that no changes to the Guidelines were necessary. With respect to the issues regarding consultation, Reclamation will continue to meet all legal obligations for appropriate consultation with non-federal parties and believes that the commitments for continued consultation with the Basin States can be implemented in a manner consistent with the provisions of applicable federal law. Moreover, Reclamation believes that some of the concerns identified in this comment letter have been addressed by Section 7.D of the updated draft Guidelines posted on December 10, 2007, which provides that the Lower Colorado Regional Director will establish procedures for the implementation of ICS and DSS after issuance of this ROD. Reclamation will continue to work closely with all stakeholders in the development of ICS and DSS procedures and in the implementation and administration of the Guidelines.

VII. Refinement of Operational Guidelines for the Preferred Alternative in Response to Public Comments

Hydrologic modeling of the Colorado River system was used to determine the potential hydrologic effects of each of the alternatives and also provided the basis for analyzing the potential effects on other environmental resources (such as recreation, biology, and energy, etc.). Nearly all modeling assumptions were common to each alternative; only the assumptions specific to each alternative were different. This approach allowed a relative comparison of the potential effects of each alternative compared to the No Action Alternative and lead to the identification of the Preferred Alternative.

Historically, the determination of the annual release volume for Lake Powell could change on a monthly basis throughout the water year. This approach afforded great flexibility to respond to changing monthly runoff forecasts yet was practical to implement since there were effectively only two operational tiers (a minimum objective release of 8.23 maf per year or releases greater due to equalization or spill avoidance). The annual release volume for Lake Mead, however, was essentially determined on an annual basis primarily to provide a greater degree of certainty to water users with respect to the water supply in the Lower Basin. The modeled operation of Lake Powell and Lake Mead for all alternatives in the Final EIS was consistent with this past operational experience and provided a valid basis for comparison.

However, given the more complicated proposed operation for Lake Powell under all of the action alternatives, Reclamation conducted additional investigations and subsequently refined the operational guidelines to include a combined monthly/annual methodology to determine the annual release volume for Lake Powell. This methodology consists of a January 1 determination of the release volume with appropriate April adjustments to those volumes, and providing the necessary flexibility to respond to changing inflow forecasts while ensuring that the operation does not result in excessive changes in monthly releases from Lake Powell.

In addition, comments were also received in both written and oral form from representatives of the Basin States with respect to the modeling assumptions used for the Basin States Alternative and the Preferred Alternative, reflected in Appendix S of the Final EIS. Specifically, the comments were in regard to the coordinated operation of Lake Powell and Lake Mead when Lake Powell is relatively high and operating near or in the equalization tier. A concern was identified where the proposed operation might not respond effectively when Lake Powell is relatively high, Lake Mead is relatively low, and a reasonably high inflow forecast occurs. Reclamation conducted additional investigations to identify approaches to ensure some additional water is released from Lake Powell when this situation arises.

Reclamation refined the proposed operational guidelines to incorporate these changes (contained in Section 6, 7, and 8 of the Guidelines) and published those refinements on the project Web site on November 16, 2007. An evaluation concluded that these refinements to the proposed Guidelines would not result in substantial changes with regard to the environmental effects and fall within the impacts already analyzed in the Final EIS.

VIII. Environmental Impacts and Implementation of Environmental Commitments

Hydrologic modeling of the Colorado River system was conducted to determine the potential hydrologic effects of the alternatives. Modeling provided projections of potential future Colorado River system conditions (*i.e.*, reservoir elevations, reservoir releases, river flows) for comparison of those conditions under the No Action Alternative to conditions under each action alternative. Due to the uncertainty with regard to future inflows into the system, multiple simulations were performed in order to quantify the uncertainties of future conditions and as such, the modeling results are typically expressed in probabilistic terms.

Hydrologic modeling also provided the basis for the analysis of the potential effects of each alternative on other environmental resources. The Final EIS evaluated 14 resource areas: Hydrologic resources (including reservoir storage and releases, groundwater, and water deliveries), water quality, air quality, visual resources, biological resources (including vegetation and wildlife and special status species), cultural resources, Indian trust assets, electrical power resources, recreation (including shoreline facilities, boating and navigation, and sport fish populations), transportation, socioeconomics (including employment, income and tax revenue, municipal and industrial water users, and recreation economics), environmental justice, indirect effects of the ICS mechanism, and climate change considerations. The potential effects to specific resources were identified and analyzed for each action alternative and compared to the potential effects to that resource under the No Action Alternative. These comparisons are typically expressed in terms of the relative differences in probabilities between the No Action Alternative and the action alternatives.

Based on the analyses in the EIS, Reclamation determined that specific measures to avoid or mitigate environmental harm were not required,

with the exception of conservation measures for listed species as noted below. For other resource areas, the impacts of the Preferred Alternative were well within the range of the alternatives considered, and generally improved conditions compared to the No Action Alternative. For a few resource areas, the Preferred Alternative resulted in minor negative impacts compared to the No Action Alternative, and measures to avoid such impacts were determined to be unnecessary or not feasible.

A. Lower Colorado River Multi-Species Conservation Plan

It is important to note that Reclamation is already undertaking significant environmental mitigation measures on the Colorado River, including the LCR MSCP from Lake Mead to the Southerly International Boundary (SIB) with Mexico, and implementation of activities pursuant to the 1996 Glen Canyon Dam ROD for the reach of the Colorado River from Glen Canyon Dam to Lake Mead.

The LCR MSCP is a 50-year cooperative effort between federal and non-federal entities, approved by the Secretary in April 2005. This program was developed to address potential effects to listed and other selected special status species (covered species) from identified ongoing and future anticipated federal discretionary actions and non-federal activities on the lower Colorado River (covered actions). The development and implementation of shortage criteria on the lower Colorado River was one of the federal covered actions (MSCP Biological Assessment Section 2.2.2.1) included in the LCR MSCP and covered under the LCR MSCP BO (FWS 2005). The LCR MSCP BO provides Endangered Species Act (ESA) compliance for the effects of covered actions for a reduction of Lake Mead reservoir elevations to 950 feet msl and flow reductions of up to 0.845 maf from Hoover Dam to Davis Dam, 0.860 maf from Davis Dam to Parker Dam, and 1.574 maf from Parker Dam to Imperial Dam. The LCR MSCP identified, and it is mitigating for, impacts to the covered species and their habitats from the flow reduction conditions described above. These impacts included the potential loss of up to:

- 2,008 acres of cottonwood-willow habitats;
- 133 acres of marsh habitat; and
- 399 acres of backwater habitat.

To address these impacts, the LCR MSCP will:

- Restore 5,940 acres of cottonwood-willow habitat;
- Restore 512 acres of marsh habitat;
- Restore 360 acres of backwater habitat;
- Stock 660,000 razorback sucker over the term of the LCR MSCP; and
- Stock 620,000 bonytail over the term of the LCR MSCP.

In addition, these habitats will be actively managed to provide habitat values greater than those of the impacted habitats. While the LCR MSCP is geared toward special status species, it is important to understand that all species that use the habitats impacted by the LCR MSCP covered activities benefit by the conservation actions currently being carried out under the LCR MSCP.

Reclamation has reviewed the effects of the Preferred Alternative in this Final EIS and has determined that all potential effects to listed species and their habitats along the Colorado River from the full pool elevation of Lake Mead to the SIB are covered by the LCR MSCP. FWS has concurred with Reclamation's determination in a letter dated November 28, 2007.

B. Glen Canyon Dam Adaptive Management Program

The 1996 Glen Canyon Dam ROD describes detailed criteria and operating plans for Glen Canyon Dam operations and includes other management actions to accomplish this objective; among these are the Glen Canyon Dam Adaptive Management Program (AMP). The AMP provides a process for assessing the effects of Glen Canyon Dam operations on downstream resources and project benefits. The results of that assessment are used to develop recommendations for modifying Glen Canyon Dam operations and other resource management actions. This is accomplished through the Adaptive Management Work Group (AMWG), a federal advisory committee. The AMWG consists of stakeholders that include federal and state agencies, representatives of the Basin States, Indian tribes, hydroelectric power customers, environmental and conservation organizations, and recreational and other interest groups.

C. Endangered Species Act Compliance

In compliance with the ESA, Reclamation submitted a Biological Assessment (BA) to FWS on September 10, 2007 and requested formal consultation on the Preferred Alternative. Reclamation divided the analysis of potential effects on listed species into three geographic areas: Lake Powell to the upper end of Lake Mead, Lake Mead to the SIB with Mexico, and potential interdependent/interrelated effects on the Virgin and Muddy Rivers in southern Nevada. Reclamation determined the effects of the Preferred Alternative within the geographic area of the MSCP (Lake Mead to SIB with Mexico) were covered by the earlier consultation on LCR MSCP, and requested FWS' concurrence on this determination by memo dated October 26, 2007. FWS concurred with this determination by memo dated November 28, 2007. For the remainder of the action area, Reclamation determined the Preferred Alternative may affect, and is likely to adversely affect the southwestern willow flycatcher, humpback chub, and Kanab ambersnail, and that the Preferred Alternative may affect, but would not be likely to adversely affect seven other species.

FWS issued its BO for the Preferred Alternative by memo dated December 12, 2007. The BO concurred with Reclamation's ''not likely to adversely affect'' findings for the seven species addressed in the BA, and found that the adverse effects to southwestern willow flycatcher, humpback chub, and Kanab ambersnail would not jeopardize the continued existence of those species. Reclamation has included the following conservation measures for listed species in the action area as part of its proposed action:

- Nonnative Fish Control—In coordination with other Department of the Interior AMP participants and through the AMP, Reclamation will continue efforts to control both cold- and warm-water nonnative fish species in the mainstem of Marble and Grand canyons, including determining and implementing levels of nonnative fish control as necessary. Control of these species using mechanical removal and other methods will help to reduce this threat.
- Humpback Chub Refuge—Reclamation will assist FWS in development and funding of a broodstock management plan and creation and maintenance of a humpback chub refuge population at a federal hatchery or other appropriate facility by providing expedited advancement of $200,000 in funding to the FWS during calendar year 2008; this amount shall be funded from, and within, the amount identified in the 2005 LCR MSCP BO. Creation of a humpback chub refuge will reduce or eliminate the potential for a catastrophic loss of the Grand Canyon population of humpback chub by providing a permanent source of genetically representative stock for repatriating the species.

• Genetic Biocontrol Symposium—Reclamation will transfer up to $20,000 in fiscal year 2008 to FWS to help fund an international symposium on the use and development of genetic biocontrol of nonnative invasive aquatic species which is tentatively scheduled for January 2009. Although only in its infancy, genetic biocontrol of nonnative species is attracting worldwide attention as a potential method of controlling aquatic invasive species. Helping fund an effort to bring researchers together will further awareness of this potential method of control and help mobilize efforts for its research and development.

• Sediment Research—In coordination with other Department of the Interior AMP participants and through the AMP, Reclamation will monitor the effect of sediment transport on humpback chub habitat and will work with the Grand Canyon Monitoring and Research Center to develop and implement a scientific monitoring plan acceptable to FWS. Although the effects of dam operation-related changes in sediment transport on humpback chub habitat are not well understood, humpback chub are known to utilize backwaters and other habitat features that require fine sediment for their formation and maintenance. Additional research will help clarify this relationship.

• Parasite Monitoring—In coordination with other Department of the Interior AMP participants and through the AMP, Reclamation will continue to support research on the effects of Asian tapeworm on humpback chub and potential methods to control this parasite. Continuing research will help better understand the degree of this threat and the potential for management actions to minimize it.

• Monitoring and Research—Through the AMP, Reclamation will continue to monitor Kanab ambersnail and its habitat in Grand Canyon and the effect of dam releases on the species, and Reclamation will also continue to assist FWS in funding morphometric and genetic research to better determine the taxonomic status of the subspecies.

• Kanab Ambersnail Monitoring and Research—Through the AMP, Reclamation will continue to monitor Kanab ambersnail and its habitat in Grand Canyon and the effect of dam releases on the species, and Reclamation will also continue to assist FWS in funding morphometric and genetic research to better determine the taxonomic status of the subspecies.

• Southwestern Willow Flycatcher Monitoring and Research—Through the AMP, Reclamation will continue to monitor southwestern willow flycatcher and its habitat and the effect of dam releases on the species throughout Grand Canyon and report findings to FWS, and will work with NPS and other AMP participants to identify actions to conserve the flycatcher.

IX. Implementing the Decision

A. Setting

Against the backdrop of prolonged drought, in 2005, with reservoir elevations dropping rapidly, the Department was faced with the challenge of making operational decisions regarding modified operations of Glen Canyon Dam and Hoover Dam. One of the challenges that the Department faced was that there were not detailed, objective guidelines to determine how the operation of the two reservoirs would be modified in drought and other low-reservoir conditions.

After receiving conflicting recommendations from representatives of the four Upper Division and the three Lower Division states, the Secretary issued a decision on May 2, 2005, charging Reclamation with the development of operational tools that can continue to assure productive use of the Colorado River into the future, while avoiding unnecessary, protracted or destabilizing litigation.

More than two years later, the drought conditions have continued and the need for detailed operational guidelines is even more necessary today as compared with mid-2005. Reclamation has conducted an extensive public process, seeking input from state, tribal and local governments, along with input from members of environmental organizations and members of the general public. These Guidelines represent the Department's determination as to the most appropriate set of guidelines to adopt at this stage of the ongoing drought.

B. Scope of Guidelines

These Guidelines are intended to be applied each year during the Interim Period with respect to the operation and management of the waters of the Colorado River stored in Lake Powell and Lake Mead. The relevant sections of these Guidelines address the following:

• Determine those circumstances under which the Secretary would reduce the annual amount of water available for consumptive use from Lake Mead to the Colorado River Lower Division states below 7.5 maf (a ''Shortage'') pursuant to Article II(B)(3) of the Consolidated Decree;

• Define the coordinated operation of Lake Powell and Lake Mead to provide improved operation of these two reservoirs, particularly under low reservoir conditions;

• Allow for the storage and delivery, pursuant to applicable federal law, of conserved Colorado River system and non-system water in Lake Mead to increase the flexibility of meeting water use needs from Lake Mead, particularly under drought and low reservoir conditions; and,

• Determine those conditions under which the Secretary may declare the availability of surplus water for use within the Lower Division states. The proposed federal action would modify the substance of the existing ISG and would change the term of the ISG from 2016 through 2026.

X. Operational Setting

A. Criteria for the Coordinated Long-Range Operation of Colorado River Reservoirs

Section 602 of the CRBPA required the Secretary to propose and adopt criteria for the coordinated long-range operation of the reservoirs constructed and operated under the authority of the Colorado River Storage Project Act of 1956, the Boulder Canyon Project Act of 1928 (BCPA), and the Boulder Canyon Project Adjustment Act. The Secretary adopted such ''Long-Range Operating Criteria'' (LROC) in 1970 and has been operating the Colorado River consistent with the LROC since 1970. In 2005, the Secretary approved minor changes to the text of the LROC. (70 FR 15873, Mar. 29, 2005). The Secretary identified the bases for the limited changes as: (1) Specific change in federal law applicable to the Operating Criteria, (2) language in the current text of the Operating Criteria that was outdated, and (3) specific modifications to Article IV(b) of the Operating Criteria that reflect actual operating experience.

It is the Department's decision that these Guidelines implement the LROC on an annual basis through the Interim Period and that the operation of the relevant Colorado River reservoirs be documented in each year's AOP (Subsection C, below). See also Section 7 of the Guidelines for further description of the relationship between the LROC and these Guidelines.

B. Interim Surplus Guidelines

Beginning in 1999, the Secretary determined that there was a need for detailed, objective guidelines to assist in the determination of availability of water in excess of 7.5 maf per year to water users in the three Lower Division states of Arizona, California, and Nevada. One of the important issues facing the Department at that time was

the question of whether to modify the LROC to address determination of a Surplus Condition or whether to adopt guidelines that would implement the LROC with detailed provisions.

At the time, the Department sought public input on the concept of modifying Article III(3)(b) of the LROC during the process that led to adoption of the ISG. See 64 FR 27010 (May 18, 1999). After reviewing the public comments received, the Department announced its intention to adopt ''interim implementing criteria pursuant to Article III(3) of the Long-Range Operating Criteria'' rather than modifying the actual text of the LROC. See 64 FR 68373 (December 7, 1999). This approach was carried through and set forth in the ROD for the ISG adopted by the Secretary. See 66 FR 7772, 7780 at Section XI(5) (''These Guidelines, which shall implement and be used for determinations made pursuant to Article III(3)(b) of the [Operating Criteria] * * * are hereby adopted * * *''). See also discussion at 70 FR 15878 (March 29, 2005) (review of LROC).

It is the Department's decision in adopting these Guidelines to continue the approach initially adopted in the ISG, and accordingly is not modifying the LROC at this time. Instead, the determinations made under these interim Guidelines will implement the relevant provisions of Article II (Lake Powell) and Article III (Lake Mead) during the Interim Period, as defined in Section 7, herein.

C. Annual Operating Plan for Colorado River Reservoirs

Section 602(b) of the CRBPA of 1968 requires that the Secretary transmit to the Congress and to the Governors of the Basin States, by January 1st of each year, a report describing the actual operation under the LROC for the preceding compact water year and the projected operation for the current year. This report is commonly referred to as the ''Annual Operating Plan'' or the ''AOP.''

In 1992, in the Grand Canyon Protection Act, Congress required that, in preparing the 602(b) AOP, the Secretary shall consult with the Governors of the Basin States and with the general public, including representatives of academic and scientific communities, environmental organizations, the recreation industry; and contractors for the purpose of federal power produced at Glen Canyon Dam.

Each year the Secretary implements the provisions of the 1968 and 1992 statutes regarding the projected operation of Colorado River reservoirs and stakeholder consultation through the Colorado River Management Work Group. This process involves appropriate consultation prior to finalization of the proposed AOP. The AOP is used to memorialize operational decisions that are made pursuant to individual federal actions (e.g., ISG, 1996 Glen Canyon Dam ROD, this ROD). Thus, the AOP serves as a single, integrated reference document required by section 602(b) of the CRBPA of 1968 regarding past and anticipated operations.

It is the Department's decision that these Guidelines be implemented on an annual basis through the Interim Period and documented in each year's AOP. This ROD addresses annual volumes of releases from Glen Canyon Dam and Hoover Dam. Accordingly, this ROD does not modify the authority of the Secretary to determine monthly, daily, hourly, or instantaneous releases from Glen Canyon Dam and Hoover Dam. See Section 7 of the Guidelines for further description of the relationship between the AOP and these Guidelines.

XI. Conditions of Implementation

A. Forbearance

1. Role of Forbearance Agreements Within the Context of the Law of the River and Relationship to Intentionally Created Surplus (ICS)

For the purposes of these Guidelines, the term ''forbearance agreements'' refers to agreements that a party who has a right to surplus Colorado River water could enter into that would provide that party's agreement to forgo (or not exercise) its right to surplus Colorado River water. In any such agreements, the party agrees to ''forbear'' or refrain from exercising its right to surplus Colorado River water under the specified terms and conditions of the applicable agreement. Through such agreements, increased flexibility of Colorado River water management can be achieved—resulting in greater conservation of water than would otherwise be accomplished.

In Years in which the Secretary determines that sufficient Mainstream water is available for delivery to satisfy annual consumptive use in the Lower Division states in excess of 7.5 maf, Article II(B)(2) of the Consolidated Decree directs the Secretary to apportion such surplus Mainstream water 50% for use in California, 46% for use in Arizona, and 4% for use in Nevada. The Boulder Canyon Project Act and Articles II(B)(2) and II(B)(6) of the Consolidated Decree, taken together, authorize the Secretary to apportion surplus water and to deliver one Lower Division state's unused apportionment for use in another Lower Division state. Pursuant to such authority and for the purpose of increasing the efficiency, flexibility, and certainty of Colorado River management and thereby helping satisfy the current and projected regional water demands, the Secretary determined that it is prudent and desirable to promulgate guidelines to establish a procedural framework for facilitating the creation and delivery of ICS within the Lower Basin.

In the absence of forbearance, surplus water is apportioned for use in the Lower Division states according to the specific percentages provided in Article II(B)(2) of the Consolidated Decree discussed above. In order to allow for management flexibility, the seven Colorado River Basin States have recommended an operational program for the creation and delivery of ICS. In furtherance of this recommendation, numerous major water users within the Lower Basin have identified their willingness, under specified circumstances, to participate in such an operational program. These parties have submitted a draft ''Forbearance Agreement,'' as preliminarily approved by the parties, as part of a package of documents (Appendix J) submitted for consideration by the Secretary as a necessary element to enable implementation of the operations contemplated by the Basin States Alternative. The Secretary has developed a Preferred Alternative based on this information, as well as other information submitted during the NEPA process.

The parties to the Forbearance Agreement have indicated that they intend that the Agreement provide the appropriate legal mechanism to achieve successful implementation of this element of the Preferred Alternative. The parties have indicated that among the conditions on their forbearance, they will forbear only with respect to a specified ICS volume and only to ICS created by projects described in exhibits attached to the Forbearance Agreement or added thereto by written consent of all parties. Given the voluntary nature of the forbearance concept, it is appropriate for the parties to clearly identify the limited conditions upon which their forbearance is granted.

Through adoption and implementation of these Guidelines, the Secretary will only approve the creation, delivery and use of ICS in a manner that is fully consistent with the provisions of the Consolidated Decree, including Articles II(B)(2) and II(B)(6) therein. The Secretary will require forbearance by the State of Arizona, the

Palo Verde Irrigation District, the Imperial Irrigation District, the Coachella Valley Water District, The Metropolitan Water District of Southern California, the City of Needles, and other California entities as appropriate, the Southern Nevada Water Authority, and the Colorado River Commission of Nevada for implementation of this element of these Guidelines (regarding ICS). If, in the opinion of the Secretary, the State of Arizona or the Palo Verde Irrigation District, the Imperial Irrigation District, the Coachella Valley Water District, The Metropolitan Water District of Southern California, the City of Needles, or other California entities as appropriate, the Southern Nevada Water Authority, or the Colorado River Commission of Nevada, unreasonably withhold forbearance, the Secretary may, after consultation with the Basin States, modify these Guidelines. Moreover, the Secretary will ensure that implementation of the ICS mechanism does not infringe on the rights of any third party who is a Contractor and who is not a party to the Forbearance Agreement.

2. Monitoring Implementation

Under these Guidelines, Colorado River water will continue to be allocated for use among the Lower Division states in a manner consistent with the provisions of the Consolidated Decree. It is expected that Lower Division states and individual Contractors for Colorado River water have or will adopt arrangements that will affect utilization of Colorado River water during the Interim Period. It is expected that water orders from Colorado River Contractors will be submitted to reflect forbearance arrangements by Lower Division states and individual Contractors. The Secretary will deliver Colorado River water to Contractors in a manner consistent with these arrangements, provided that any such arrangements are consistent with the BCPA, the Consolidated Decree and do not infringe on the rights of third parties. Surplus water will only be delivered to entities with contracts for surplus water. ICS will be delivered pursuant to Section 3.C. of these Guidelines and a Delivery Agreement.

B. Delivery Agreement

Article II(B)(5) of the Consolidated Decree in Arizona v. California states that mainstream Colorado River water shall be released or delivered to water users in Arizona, California, and Nevada ''only pursuant to valid contracts therefore made with such users by the Secretary of the Interior, pursuant to Section 5 of the Boulder Canyon Project Act or any other applicable federal statute.'' Section 5 of the Boulder Canyon Project Act authorizes the Secretary to enter into such contracts.

Numerous Contractors in Arizona, California, and Nevada now hold contracts which entitle them to the delivery of Colorado River water under the circumstances and in the priorities specified in the individual contracts. Contracts entered into prior to the adoption of these Guidelines do not, however, expressly address circumstances in which ICS or DSS might be created or delivered.

To ensure the requirements of Section 5 of the Boulder Canyon Project Act and Article II(B)(5) of the Consolidated Decree are complied with, and to reduce the possibility of ambiguity, the Secretary anticipates entering into delivery contracts with any person or persons intending to create ICS or DSS. Such contracts are expected to address the requirements set forth in the Guidelines for the approval of ICS or DSS plans, the certification and verification of the ICS or DSS created under the plans, the ordering and delivery of ICS or DSS, the accounting for ICS or DSS in the annual report filed with the U.S. Supreme Court in accordance with Article V of the Consolidated Decree, and such other matters as may bear on the delivery of the ICS or DSS, as for example the point of delivery and place of use, if not already provided for under existing contracts.

C. Mexico

The United States delivers an annual allotment of Colorado River water to Mexico pursuant to the treaty between the United States of America and Mexico relating to the utilization of waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed February 3, 1944, and its supplementary protocol signed November 14, 1944. In adopting these Guidelines the Department of the Interior is making a final agency action regarding the operation of Lake Powell and Lake Mead, and the delivery of water to water users in the United States, in response to the worst drought in the Basin in over a century of recordkeeping.

Prior to adopting these Guidelines, the Department provided information on the proposed action to the USIBWC, and met with representatives of the Mexican Section of the IBWC and the Mexican Government. The Department has considered the information provided by the USIBWC prior to adopting these Guidelines, including information representing the views of the Government of Mexico. The USIBWC has advised that the Department may proceed with planning and implementation activities for these Guidelines with the understanding that these Guidelines are not intended to constitute an interpretation or application of the 1944 Treaty or to represent current United States policy or a determination of future United States policy regarding deliveries to Mexico.

The Department notes the intention of the Governments of the United States and Mexico, memorialized in a Joint Statement issued August 13, 2007, to cooperate and collaborate regarding issues related to the lower portion of the Colorado River under the auspices of the IBWC.

D. Intentionally Created Surplus

1. Findings

ICS may be created through projects that create water system efficiency or extraordinary conservation or tributary conservation or the importation of non-Colorado River System water into the Mainstream. ICS is consistent with the concept that entities may take actions to augment storage of water in the lower Colorado River Basin. The ICS shall be delivered to the Contractor that created it pursuant to both Articles II(B)(2) and II(B)(6) of the Consolidated Decree and Forbearance Agreements. Implementation of these Guidelines for ICS is conditioned upon execution of Forbearance Agreements and Delivery Agreements as further provided for in these Guidelines.

2. Purposes

The primary purposes of ICS are to: (a) Encourage the efficient use and management of Colorado River water; and to increase the water supply in Colorado River System reservoirs, through the creation, delivery and use of ICS; (b) help minimize or avoid shortages to water users in the Lower Basin; (c) benefit storage of water in both Lake Powell and Lake Mead; (d) increase the surface elevations of both Lake Powell and Lake Mead to higher levels than would have otherwise occurred; and (f) assure any Contractor that invests in conservation or augmentation to create ICS that no other Contractor will claim the ICS created by the Contractor pursuant to an approved plan by the Secretary.

3. Quantities

The maximum quantities of Extraordinary Conservation ICS that may be accumulated in all ICS Accounts, at any time, upon the effective date of these Guidelines is

limited to the amounts provided in Section 3.B.5. of these Guidelines. The maximum quantities of Extraordinary Conservation ICS that may be created and/or delivered in any given Year are also limited to the amounts provided in Sections 3.B.4. and 3.C.4., respectively. As described in the Final EIS, Reclamation has analyzed ICS amounts in excess of the amounts approved by this Record of Decision and provided in these Guidelines. Any decision by the Secretary to increase the amounts in excess of the amounts provided in these Guidelines would be based on actual operating experience and would require modification of these Guidelines after consultation with the Basin States.

E. Relationship With Existing Law

These Guidelines are not intended to, and do not:

1. Guarantee or assure any water user a firm supply for any specified period;

2. Change or expand existing authorities under applicable federal law, except as specifically provided herein with respect to determinations under the Long-Range Operating Criteria and administration of water supplies during the effective period of these Guidelines;

3. Address intrastate storage or intrastate distribution of water, except as may be specifically provided by Lower Division states and individual Contractors for Colorado River water who may adopt arrangements that will affect utilization of Colorado River water during the effective period of these Guidelines;

4. Change the apportionments made for use within individual States, or in any way impair or impede the right of the Upper Basin to consumptively use water available to that Basin under the Colorado River Compact;

5. Affect any obligation of any Upper Division state under the Colorado River Compact;

6. Affect any right of any State or of the United States under Sec. 14 of the Colorado River Storage Project Act of 1956 (70 Stat. 105); Sec. 601(c) of the Colorado River Basin Project Act of 1968 (82 Stat. 885); the California Limitation Act (Act of March 4, 1929; Ch. 16, 48th Sess.); or any other provision of applicable federal law;

7. Affect the rights of any holder of present perfected rights or reserved rights, which rights shall be satisfied within the apportionment of the State within which the use is made, and in the Lower Basin, in accordance with the Consolidated Decree; or

8. Constitute an interpretation or application of the 1944 Treaty between the United States and Mexico Relating to the Utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande (1944 Treaty) or to represent current United States policy or a determination of future United States policy regarding deliveries to Mexico. The United States will conduct all necessary and appropriate discussions regarding the proposed federal action and implementation of the 1944 Treaty with Mexico through the International Boundary and Water Commission (IBWC) in consultation with the Department of State.

F. Definitions

For purposes of these Guidelines, the following definitions apply:

1. ''24-Month Study'' refers to the operational study that reflects the current Annual Operating Plan that is updated each month by Reclamation to project future reservoir contents and releases. The projections are updated each month using the previous month's reservoir contents and the latest inflow and water use forecasts. In these Guidelines, the term ''projected on January 1'' shall mean the projection of the January 1 reservoir contents provided by the 24-Month Study that is conducted in August of the previous Year.

2. ''AOP'' shall mean the Annual Operating Plan for the Colorado River System Reservoirs.

3. ''Active Storage'' shall mean the amount of water in reservoir storage, exclusive of bank storage, which can be released through the existing reservoir outlet works, consistent with the Colorado River Basin Project Act of 1968 (82 Stat. 885).

4. ''BCPA'' shall mean the Boulder Canyon Project Act of 1928 (28 Stat. 1057).

5. ''Basin States'' shall mean the seven Colorado River Basin States of Arizona, California, Colorado, New Mexico, Nevada, Utah, and Wyoming.

6. ''Certification Report'' shall mean the written documentation provided by a Contractor that provides the Secretary with sufficient information to allow the Secretary to determine whether the quantity of ICS or DSS approved by the Secretary in an approved plan has been created and whether the creation was consistent with the approved plan.

7. ''Colorado River System'' shall have the same meaning as defined in the 1922 Colorado River Compact.

8. ''Consolidated Decree'' shall mean the Consolidated Decree entered by the United States Supreme Court in *Arizona* v. *California*, 547 U.S. 150 (2006).

9. ''Contractor'' shall mean an entity holding an entitlement to Mainstream water under (a) the Consolidated Decree, (b) a water delivery contract with the United States through the Secretary, or (c) a reservation of water by the Secretary, whether the entitlement is obtained under (a), (b) or (c) before or after the adoption of these Guidelines.

10. ''DSS Account'' shall mean records established by the Secretary regarding DSS.

11. ''Delivery Agreement'' shall mean an agreement consistent with these Guidelines entered into between the Secretary of the Interior and one or more Contractors creating ICS.

12. ''Developed Shortage Supply (''DSS'')'' shall mean water available for use by a Contractor under the terms and conditions of a Delivery Agreement and Section 4 of these Guidelines in a Shortage Condition, under Article III(B)(3) of the Consolidated Decree.

13. ''Direct Delivery Domestic Use'' shall mean direct delivery of water to domestic end users or other municipal and industrial water providers within the Contractor's area of normal service, including incidental regulation of Colorado River water supplies within the Year of operation but not including Off-stream Banking. For the Metropolitan Water District of Southern California (MWD), Direct Delivery Domestic Use shall include delivery of water to end users within its area of normal service, incidental regulation of Colorado River water supplies within the Year of operation, and Off-stream Banking only with water delivered through the Colorado River Aqueduct.

14. ''Domestic Use'' shall have the same meaning as defined in the 1922 Colorado River Compact.

15. ''Forbearance Agreement'' shall mean an agreement under which one or more Contractors agree to forbear a right to ICS, under a water delivery contract or the Consolidated Decree.

16. ''ICS Account'' shall mean records established by the Secretary regarding ICS.

17. ''ICS Determination'' shall mean a determination by the Secretary that ICS is available for delivery.

18. ''Intentionally Created Surplus (''ICS'')'' shall mean surplus Colorado River System water available for use under the terms and conditions of a Delivery Agreement, a Forbearance Agreement, and these Guidelines.

a. ICS created through extraordinary conservation, as provided for in Section 3.A.1., shall be referred to as ''Extraordinary Conservation ICS.''

b. ICS created through tributary conservation, as provided for in Section 3.A.2., shall be referred to as ''Tributary Conservation ICS.''

c. ICS created through system efficiency projects, as provided for in

Section 3.A.3., shall be referred to as ''System Efficiency ICS.''

d. ICS created through the importation of non-Colorado River System Water, as provided for in Section 3.A.4., shall be referred to as ''Imported ICS.''

19. ''Interim Period'' shall mean the effective period as described in Section 8.

20. ''Long-Range Operating Criteria (''LROC'')'' shall mean the Criteria for the Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968 (Pub. L. 90–537), published at 35 FR 8951 (June 10, 1970), as amended March 21, 2005.

21. ''Lower Division states'' shall mean the Colorado River Basin States of Arizona, California, and Nevada.

22. ''Mainstream'' shall have the same meaning as defined in the Consolidated Decree.

23. ''Off-stream Banking'' shall mean the diversion of Colorado River water to underground storage facilities for use in subsequent Years from the facility used by a Contractor diverting such water.

24. ''ROD'' shall mean the Record of Decision issued by the Secretary for the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead.

25. ''Upper Division states'' shall mean the Colorado River Basin States of Colorado, New Mexico, Utah, and Wyoming.

26. ''Water Accounting Report'' shall mean the annual Colorado River Accounting and Water Use Report—Arizona, California, and Nevada that includes, but is not limited to, the compilation of records in accordance with Article V of the Consolidated Decree.

27. ''Water Year'' shall mean October 1 through September 30.

28. ''Year'' shall mean calendar year.

G. Interim Guidelines for the Operation of Lake Powell and Lake Mead

These Guidelines shall include Sections XI.A., B., E., and F. above and this Section XI.G. These Guidelines which shall implement and be used for determinations made pursuant to the Long-Range Operating Criteria during the effective period identified in Section 8, are hereby adopted:

Section 1. Allocation of Unused Basic Apportionment Water Under Article II(B)(6)

A. Introduction

Article II(B)(6) of the Consolidated Decree allows the Secretary to allocate water that is apportioned to one Lower Division state, but is for any reason unused in that State, to another Lower Division state. This determination is made for one Year only and no rights to recurrent use of the water accrue to the state that receives the allocated water.

B. Application to Unused Basic Apportionment

Before making a determination of a Surplus Condition under these Guidelines, the Secretary will determine the quantity of apportioned but unused water excluding ICS created in that Year from the basic apportionments under Article II(B)(6), and will allocate such water in the following order of priority:

1. Meet the Direct Delivery Domestic Use requirements of MWD and Southern Nevada Water Authority (SNWA), allocated as agreed by said agencies;

2. Meet the needs for Off-stream Banking activities for use in California by MWD and for use in Nevada by SNWA, allocated as agreed by said agencies; and

3. Meet the other needs for water in California in accordance with the California Seven-Party Agreement as supplemented by the Quantification Settlement Agreement.

Section 2. Determination of Lake Mead Operation During the Interim Period

In the development of the AOP, the Secretary shall use the August 24-Month Study projections for the following January 1 system storage and reservoir water surface elevations to determine the Lake Mead operation for the following Calendar Year as described in this Section 2.

A. Normal Conditions

1. Lake Mead above elevation 1,075 feet and below elevation 1,145 feet

In years when Lake Mead elevation is projected to be above 1,075 feet and below elevation 1,145 feet on January 1, the Secretary shall determine either a Normal Condition, or, under Section 2.B.5., an ICS Surplus Condition.

B. Surplus Conditions

1. Partial Domestic Surplus

[Adopted January 16, 2001; Deleted December 13, 2007.]

2. Domestic Surplus

(Lake Mead at or above elevation 1,145 feet and below the elevation that triggers a Quantified Surplus (70R Strategy).)

In years when Lake Mead content is projected to be at or above elevation 1,145 feet, but less than the amount which would initiate a Surplus under Section 2.B.3., Quantified Surplus, or Section 2.B.4., Flood Control Surplus, on January 1, the Secretary shall determine a Domestic Surplus Condition. The amount of such Surplus shall equal—

a. From the effective date of these Guidelines through December 31, 2015 (through preparation of the 2016 AOP):

(1) For Direct Delivery Domestic Use by MWD, 1.250 maf reduced by the amount of basic apportionment available to MWD.

(2) For use by SNWA, the Direct Delivery Domestic Use within the SNWA service area in excess of the State of Nevada's basic apportionment.

(3) For use in Arizona, the Direct Delivery Domestic Use in excess of Arizona's basic apportionment.

b. From January 1, 2016 (for preparation of the 2017 AOP) through December 31, 2025 (through preparation of the 2026 AOP):

(1) For use by MWD, 250,000 af per Year in addition to the amount of California's basic apportionment available to MWD.

(2) For use by SNWA, 100,000 af per Year in addition to the amount of Nevada's basic apportionment available to SNWA.

(3) For use in Arizona, 100,000 af per Year in addition to the amount of Arizona's basic apportionment available to Arizona Contractors.

3. Quantified Surplus (70R Strategy) [2]

In years when the Secretary determines that water should be delivered for beneficial consumptive use to reduce the risk of potential reservoir spills based on the 70R Strategy the Secretary shall determine a Quantified Surplus Condition and allocate a Quantified Surplus sequentially as follows:

a. Establish the volume of the Quantified Surplus. For the purpose of determining the existence, and establishing the volume, of Quantified Surplus, the Secretary shall not consider any volume of ICS as defined in these Guidelines.

b. Allocate and distribute the Quantified Surplus 50 percent to California, 46 percent to Arizona, and 4 percent to Nevada, subject to c. through e. that follow.

c. Distribute California's share first to meet basic apportionment demands and MWD's demands, and then to California Priorities 6 and 7 and other surplus

[2] 70R is a spill avoidance strategy that determines a surplus if the January 1 projected system storage space is less than the space required by the flood control criteria, assuming a natural inflow of 17.4 maf (the 70th percentile non-exceedence flow). See ISG Final EIS at Section 2.3.1.2.

contracts. Distribute Nevada's share first to meet basic apportionment demands and then to the remaining demands. Distribute Arizona's share to surplus demands in Arizona including Off-stream Banking and interstate banking demands. Nevada shall receive first priority for interstate banking in Arizona.

d. Distribute any unused share of the Quantified Surplus in accordance with Section 1.

e. Determine whether MWD, SNWA and Arizona have received the amount of water they would have received under Section 2.B.2., if a Quantified Surplus Condition had not been determined. If they have not, then determine and meet all demands provided for in Section 2.B.2.

4. Flood Control Surplus

In years in which the Secretary makes space-building or flood control releases [3] pursuant to the 1984 Field Working Agreement between Reclamation and the Army Corps of Engineers (as may be amended), the Secretary shall determine a Flood Control Surplus for the remainder of that Year or the subsequent Year. In such years, releases will be made to satisfy all beneficial uses within the United States, including unlimited Off-stream Banking.

5. ICS Surplus

a. In years in which Lake Mead's elevation is projected to be above elevation 1,075 feet on January 1, a Flood Control Surplus has not been determined, and delivery of ICS has been requested, the Secretary may determine an ICS Surplus Condition in lieu of a Normal Condition or in addition to other operating conditions that are based solely on the elevation of Lake Mead.

b. In years in which a Quantified Surplus or a Domestic Surplus is available to a Contractor, the Secretary shall first deliver the Quantified Surplus or Domestic Surplus before delivering any requested ICS to that Contractor. If available Quantified Surplus or Domestic Surplus is insufficient to meet a Contractor's demands, the Secretary shall deliver ICS available in that Contractor's ICS Account at the request of the Contractor, subject to the provisions of Section 3.C.

C. Allocation of Colorado River Water and Forbearance and Reparation Arrangements

[Content of 2001 ISG Section 2.C., Allocation of Colorado River Water and Forbearance and Reparation Arrangements, is now found at III.A., as modified.]

D. Shortage Conditions

1. Deliveries to the Lower Division States during Shortage Condition Years shall be implemented in the following manner:

a. In years when Lake Mead content is projected to be at or below elevation 1,075 feet and at or above 1,050 feet on January 1, a quantity of 7.167 maf shall be apportioned for consumptive use in the Lower Division States of which 2.48 maf shall be apportioned for use in Arizona and 287,000 af shall be apportioned for use in Nevada in accordance with the Arizona-Nevada Shortage Sharing Agreement dated February 9, 2007, and 4.4 maf shall be apportioned for use in California.

b. In years when Lake Mead content is projected to be below elevation 1,050 feet and at or above 1,025 feet on January 1, a quantity of 7.083 maf shall be apportioned for consumptive use in the Lower Division States of which 2.4 maf shall be apportioned for use in Arizona and 283,000 af shall be apportioned for use in Nevada in accordance with the Arizona-Nevada Shortage Sharing Agreement dated February 9, 2007, and 4.4 maf shall be apportioned for use in California.

c. In years when Lake Mead content is projected to be below elevation 1,025 feet on January 1, a quantity of 7.0 maf shall be apportioned for consumptive use in the Lower Division States of which 2.32 maf shall be apportioned for use in Arizona and 280,000 af shall be apportioned for use in Nevada in accordance with the Arizona-Nevada Shortage Sharing Agreement dated February 9, 2007, and 4.4 maf shall be apportioned for use in California.

2. During a Year when the Secretary has determined a Shortage Condition, the Secretary shall deliver Developed Shortage Supply available in a Contractor's DSS Account at the request of the Contractor, subject to the provisions of Section 4.C.

Section 3. Implementation of Intentionally Created Surplus

[Content of 2001 ISG Section 3., Implementation of Guidelines, is now found at Section 7., as modified herein.]

A. Categories of ICS

1. Extraordinary Conservation ICS

A Contractor may create Extraordinary Conservation ICS through the following activities:

a. Fallowing of land that currently is, historically was, and otherwise would have been irrigated in the next Year.

b. Canal lining programs.

c. Desalination programs in which the desalinated water is used in lieu of Mainstream water.

d. Extraordinary conservation programs that existed on January 1, 2006.

e. Extraordinary Conservation ICS demonstration programs pursuant to a letter agreement entered into between Reclamation and the Contractor prior to the effective date of these Guidelines.

f. Tributary Conservation ICS created under Section 3.A.2. and not delivered in the Year created.

g. Imported ICS created under Section 3.A.4. and not delivered in the Year created.

h. Other extraordinary conservation measures, including but not limited to, development and acquisition of a non-Colorado River System water supply used in lieu of Mainstream water within the same state, in consultation with the Basin States.

2. Tributary Conservation ICS

A Contractor may create Tributary Conservation ICS by purchasing documented water rights on Colorado River System tributaries within the Contractor's state if there is documentation that the water rights have been used for a significant period of Years and that the water rights were perfected prior to June 25, 1929 (the effective date of the Boulder Canyon Project Act). The actual amount of any Tributary Conservation ICS introduced to the Mainstream shall be subject to verification by the Secretary as provided in Section 3.D. Any Tributary Conservation ICS not delivered pursuant to Section 3.C. or deducted pursuant to Section 3.B.2. in the Year it was created will, at the beginning of the following Year, be converted to Extraordinary Conservation ICS and will thereafter be subject to all provisions applicable to Extraordinary Conservation ICS. Tributary Conservation ICS may be delivered for Domestic Use only.

3. System Efficiency ICS

A Contractor may make contributions of capital [4] to the Secretary for use in

[3] Under current practice, surplus waters are made available to Mexico pursuant to the 1944 Treaty (when Mexico may schedule up to an additional 0.2 maf) when flood control releases are made. These Guidelines are not intended to affect that practice. Any issues relating to the implementation of the 1944 Treaty, including any potential changes in approach relating to surplus declarations under the 1944 Treaty, would be addressed with Mexico as appropriate through the USIBWC.

[4] To the extent permitted by federal law, monies to pay construction, operation, maintenance, repair, and/or replacement costs.

projects designed to realize system efficiencies that save water that would otherwise be lost from the Mainstream in the United States. An amount of water equal to a portion of the water conserved would be made available to contributing Contractor(s) by the Secretary as System Efficiency ICS.[5] System efficiency projects are intended only to provide temporary water supplies. System Efficiency ICS will be delivered to the contributing Contractor(s) on a schedule of annual deliveries as provided in an exhibit to a Forbearance Agreement and Delivery Agreement. The Secretary may identify potential system efficiency projects, terms for capital participation in such projects, and types and amounts of benefits the Secretary could provide in consideration of non-federal capital contributions to system efficiency projects, including identification of a portion of the water saved by such projects.

4. Imported ICS

A Contractor may create Imported ICS by introducing non-Colorado River System water in that Contractor's state into the Mainstream. Contractors proposing to create Imported ICS shall make arrangements with the Secretary, contractual or otherwise, to ensure no interference with the Secretary's management of Colorado River System reservoirs and regulatory structures. Any arrangement shall provide that the Contractor must obtain appropriate permits or other authorizations required by state and federal law. The actual amount of any Imported ICS introduced to the Mainstream shall be subject to verification by the Secretary as provided in Section 3.D. Any Imported ICS not delivered pursuant to Section 3.C. or deducted pursuant to Section 3.B.2. in the Year it was created will be converted, at the beginning of the following Year, to Extraordinary Conservation ICS and thereafter will be subject to all provisions applicable to Extraordinary Conservation ICS.

B. Creation of ICS

A Contractor may only create ICS in accordance with the following conditions:

1. A Contractor shall submit a plan for the creation of ICS to the Secretary demonstrating how all requirements of these Guidelines will be met in the Contractor's creation of ICS. Until such plan is reviewed and approved by the Secretary, subject to such environmental compliance as may be required, such plan or any ICS purportedly created through it shall not be a basis for creation of ICS. An ICS plan will consist of at a minimum the following information:

a. Project description, including what extraordinary measures will be taken to conserve or import water;

b. Term of the activity;

c. Estimate of the amount of water that will be conserved or imported;

d. Proposed methodology for verification of the amount of water conserved or imported; and

e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to creation of ICS.

A Contractor may modify its approved plan for creation of ICS during any Year, subject to approval by the Secretary. A Contractor with an approved multi-Year plan for System Efficiency ICS is not required to seek further approval by the Secretary in subsequent Years unless the Contractor seeks to modify the plan.

2. There shall be a one-time deduction of five percent (5%) from the amount of ICS in the Year of its creation. This system assessment shall result in additional system water in storage in Lake Mead. This one-time system assessment shall not apply to:

a. System Efficiency ICS created pursuant to Section 3.B. because a large portion of the water conserved by this type of project will increase the quantity of system water in storage over time.

b. Extraordinary Conservation ICS created by conversion of Tributary Conservation ICS that was not delivered in the Year created, pursuant to this Section 3.B. because 5% of the ICS is deducted at the time the Tributary Conservation ICS is created.

c. Extraordinary Conservation ICS created by conversion of Imported ICS that was not delivered in the Year created, pursuant to this Section 3.B. because 5% of the ICS is deducted at the time the Imported ICS is created.

d. ICS created under demonstration programs in 2006 and 2007 which has already been assessed the 5% system assessment.

3. Except as provided in Sections 3.A.2. and 3.A.4., Extraordinary Conservation ICS can only be created if such water would have otherwise been beneficially used.

4. The maximum total amount of Extraordinary Conservation ICS that can be created during any Year is limited to the following:

a. 400,000 af for California Contractors;

b. 125,000 af for Nevada Contractors; and

c. 100,000 af for Arizona Contractors.

5. The maximum quantity of Extraordinary Conservation ICS that may be accumulated in all ICS Accounts, at any time, is limited to the following:

a. 1.5 maf for California Contractors;

b. 300,000 af for Nevada Contractors; and

c. 300,000 af for Arizona Contractors.

6. Except as provided in Sections 3.A.2. and 3.A.4., no category of surplus water can be used to create Extraordinary Conservation ICS.

7. The quantity of Extraordinary Conservation ICS remaining in an ICS Account at the end of each Year shall be diminished by annual evaporation losses of 3%. Losses shall be applied annually to the end-of-the-Year balance of Extraordinary Conservation ICS beginning in the Year after the ICS is created and continuing until no Extraordinary Conservation ICS remains in Lake Mead. No evaporation losses shall be assessed during a Year in which the Secretary has determined a Shortage Condition.

8. Extraordinary Conservation ICS from a project within a state may only be credited to the ICS Account of a Contractor within that state that has funded or implemented the project creating ICS, or to the ICS Account of a Contractor within the same state as the funding entity and project and with written agreement of the funding entity.

9. A Contractor must notify Reclamation of the amount of ICS it wishes to create for the subsequent Year pursuant to an existing, approved plan. A Contractor may request mid-Year modification(s) to reduce the amount of ICS created during that Year, subject to the requirements of this Section 3.B. A Contractor cannot increase the amount of ICS it had previously scheduled to create during the Year.

C. Delivery of ICS

The Secretary shall deliver ICS in accordance with the following conditions:

1. The delivery shall be consistent with the terms of a Delivery Agreement with a Contractor regarding ICS.

2. The Secretary has determined an ICS Surplus Condition.

3. The existence of Forbearance Agreements necessary to bring the delivery of the ICS into compliance with Articles II(B)(2) and II(B)(6) of the Consolidated Decree.

[5] Should other Contractor(s) elect to participate in a system efficiency project following the Secretary making an amount of water available to the contributing Contractor(s), the Secretary shall reduce the amount of water in the contributing Contractor(s)' ICS Account(s) and credit the electing Contractor(s)' ICS Account(s) in an equal amount in accordance with the terms of the Secretary's agreement for the funding of the system efficiency project.

4. A limitation on the total amount of Extraordinary Conservation ICS that may be delivered in any Year is as follows:

a. 400,000 af for California Contractors;

b. 300,000 af for Nevada Contractors; and

c. 300,000 af for Arizona Contractors.

5. If the May 24-Month Study for that Year indicates that a Shortage Condition would be determined in the succeeding Year if the requested amounts for the current Year under Section 3.C. were delivered, the Secretary may deliver less than the amounts of ICS requested to be delivered.

6. If the Secretary releases Flood Control Surplus water, Extraordinary Conservation ICS accumulated in ICS Accounts shall be reduced by the amount of the Flood Control Surplus on an acre-foot for acre-foot basis until no Extraordinary Conservation ICS remains. The reductions to the ICS Accounts shall be shared on a pro-rata basis among all Contractors that have accumulated Extraordinary Conservation ICS.

7. If a Contractor has an overrun payback obligation, as described in the October 10, 2003 Inadvertent Overrun and Payback Policy or Exhibit C to the October 10, 2003 Colorado River Water Delivery Agreement, the Contractor must pay the overrun payback obligation in full before requesting or receiving delivery of ICS. The Contractor's ICS Account shall be reduced by the amount of the overrun payback obligation in order to pay the overrun payback obligation.

8. If more ICS is delivered to a Contractor than is actually available for delivery to the Contractor in that Year, then the excess ICS delivered shall be treated as an inadvertent overrun until it is fully repaid.

9. A Contractor may request mid-Year modification(s) to increase or reduce the amount of ICS to be delivered during that Year because of changed conditions, emergency, or hardship, subject to the requirements of this Section 3.C.

10. The Contractor shall agree in the Delivery Agreement that the records of the Contractor relating to the creation of ICS shall be open to inspection by the Secretary and by any Contractor or Basin State.

D. Accounting for ICS

The Secretary shall develop procedures to account for and verify, on an annual basis, ICS creation and delivery. At a minimum such procedures shall include the following:

1. A Contractor shall submit for the Secretary's review and verification, appropriate information, as determined by the Secretary, contained in a Certification Report, to demonstrate the amount of ICS created and that the method of creation was consistent with the Contractor's approved ICS plan, a Forbearance Agreement, and a Delivery Agreement. Such information shall be submitted in the Year following the creation of the ICS.

2. The Secretary, acting through the Lower Colorado Regional Director, shall verify the information submitted pursuant to this section, and provide a final written decision to the Contractor regarding the amount of ICS created. The results of such final written decisions shall be made available to the public through publication pursuant to Section 3.D.3. and other appropriate means. A Contractor and any party to an applicable Forbearance Agreement may appeal the Regional Director's verification decision first to the Regional Director and then to the Secretary; and through judicial processes.

3. Each Year the Water Accounting Report will be supplemented to include ICS Account balance information for each Contractor and shall address ICS creation, deliveries, amounts no longer available for delivery due to releases for flood control purposes, deductions pursuant to Section 3.B.2., deductions due to annual evaporation losses pursuant to Section 3.B.7., any amounts of ICS converted to Extraordinary Conservation ICS, and ICS remaining available for delivery.

Section 4. Implementation of Developed Shortage Supply

[Content of 2001 ISG Section 4., Effective Period & Termination, is now found at Section 8., as modified herein.]

A. Categories of DSS

1. Tributary Conservation DSS

A Contractor may create Tributary Conservation DSS by purchasing documented water rights on Colorado River System tributaries within the Contractor's state if there is documentation that the water rights have been used for a significant period of Years and that the water rights were perfected prior to June 25, 1929 (the effective date of the Boulder Canyon Project Act). The actual amount of any Tributary Conservation DSS introduced to the Mainstream shall be subject to verification by the Secretary as provided in Section 4.D. Tributary Conservation DSS may be delivered for Domestic Use only.

2. Imported DSS

A Contractor may create Imported DSS by introducing non-Colorado River System water in that Contractor's state into the Mainstream, making sufficient arrangements with the Secretary, contractual or otherwise, to ensure no interference with the Secretary's management of Colorado River System reservoirs and regulatory structures. Any arrangement shall provide that the Contractor must obtain appropriate permits or other authorizations required by state and federal law. The actual amount of any Imported DSS introduced to the Mainstream shall be subject to verification by the Secretary as provided in Section 4.D.

B. Creation of DSS

A Contractor may only create DSS in accordance with the following conditions:

1. A Contractor shall submit a plan for the creation of DSS to the Secretary demonstrating how all requirements of these Guidelines will be met in the Contractor's creation of DSS. Until such plan is reviewed and approved by the Secretary, subject to such environmental compliance as may be required, such plan, or any DSS purportedly created through it, shall not be a basis for creation of DSS. A DSS plan will consist of at a minimum the following information:

a. Project description, including what extraordinary measures will be taken to conserve or import water;

b. Term of the activity;

c. Estimate of the amount of water that will be conserved or imported;

d. Proposed methodology for verification of the amount of water conserved or imported; and

e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to creation of DSS.

A Contractor may modify its approved plan for creation of DSS during any Year, subject to approval by the Secretary.

2. There shall be a one-time deduction of five percent (5%) from the amount of DSS in the Year of its creation. This system assessment shall result in additional system water in storage in Lake Mead.

3. DSS may only be created during a Year when the Secretary has determined a Shortage Condition.

4. DSS may only be created by a project that is approved by the Secretary for creation prior to the Secretary determining a Shortage Condition.

5. A Contractor must notify Reclamation of the amount of DSS it

wishes to create for the subsequent Year pursuant to an existing, approved plan. A Contractor may request mid-Year modification(s) to reduce the amount of DSS created during that Year, subject to the requirements of this Section 4.B. A Contractor cannot increase the amount of DSS it had previously scheduled to create during the Year.

C. Delivery of DSS

The Secretary shall deliver DSS in accordance with the following conditions:

1. The delivery shall be consistent with the terms of a Delivery Agreement with a Contractor regarding DSS.

2. The Secretary has determined a Shortage Condition.

3. Delivery of DSS shall not cause the total deliveries within the Lower Division states to reach or exceed 7.5 maf in any Year.

4. Delivery of DSS shall be in accordance with Article II(B)(3) of the Consolidated Decree.

5. If a Contractor has an overrun payback obligation, as described in the October 10, 2003 Inadvertent Overrun and Payback Policy or Exhibit C to the October 10, 2003 Colorado River Water Delivery Agreement, the Contractor must pay the overrun payback obligation in full before requesting or receiving delivery of DSS. The Contractor's DSS Account shall be reduced by the amount of the overrun payback obligation in order to pay the overrun payback obligation.

6. If more DSS is delivered to a Contractor than is actually available for delivery to the Contractor in that Year, then the excess DSS delivered shall be treated as an inadvertent overrun until it is fully repaid.

7. A Contractor may request mid-Year modification(s) to increase or reduce the amount of DSS to be delivered during that Year because of changed conditions, emergency, or hardship, subject to the requirements of this Section 4.C.

8. The Contractor shall agree in the Delivery Agreement that the records of the Contractor relating to the creation of DSS shall be open to inspection by the Secretary or by any Contractor or Basin State.

9. DSS may only be delivered in the Year of its creation. Any DSS not delivered pursuant to this Section 4.C. in the Year it is created may not be converted to Extraordinary Conservation ICS.

D. Accounting for DSS

The Secretary shall develop procedures to account for and verify, on an annual basis, DSS creation and delivery. At a minimum such procedures shall include the following:

1. A Contractor shall submit for the Secretary's review and verification appropriate information, as determined by the Secretary, contained in a Certification Report, to demonstrate the amount of DSS created and that the method of creation was consistent with the Contractor's approved DSS plan and a Delivery Agreement. Such information shall be submitted in the Year following the creation of the DSS.

2. The Secretary, acting through the Lower Colorado Regional Director, shall verify the information submitted pursuant to this section, and provide a final written decision to the Contractor regarding the amount of DSS created. The results of such final written decisions shall be made available to the public through publication pursuant to Section 4.D.3. and other appropriate means. The Contractor may appeal the Regional Director's verification decision first to the Regional Director and then to the Secretary; and through judicial processes.

3. Each Year the Water Accounting Report will be supplemented to include DSS information for each Contractor and shall address DSS creation, deliveries, and deductions pursuant to Section 4.B.2.

Section 5. California's Colorado River Water Use Plan Implementation Progress

A. Introduction

[Adopted January 16, 2001; Deleted December 13, 2007.]

B. California's Quantification Settlement Agreement

[Adopted January 16, 2001; Deleted December 13, 2007.]

C. California's Colorado River Water Use Reductions

The California Agricultural (Palo Verde Irrigation District, Yuma Project Reservation Division, Imperial Irrigation District, and Coachella Valley Water District) usage plus 14,500 af of Present Perfected Right (PPR) use would need to be at or below the following amounts at the end of the Year indicated in Years other than Quantified or Flood Control Surplus (for Decree accounting purposes all reductions must be within 25,000 af of the amounts stated):

Benchmark date (calendar year)	Benchmark quantity (California agricultural usage & 14,500 AF of PPR use in MAF)
2003	[6] 3.75
2006	[6] 3.64
2009	[7] 3.60
2012	3.47

In the event that California has not reduced its use in accordance with the limits set forth above in any Year in which the Benchmark Quantity applies, the surplus determination under Section 2.B.2. of these Guidelines will be suspended and will instead be based upon the 70R Strategy, for up to the remainder of the term of these Guidelines. If however, California meets the missed Benchmark Quantity before the next Benchmark Date or the 2012 Benchmark Quantity after 2012, the surplus determination under Section 2.B.2. shall be reinstated as the basis for the surplus determination under the AOP for the next following Year(s).

As part of the AOP process during the Interim Period of these Guidelines, California shall report to the Secretary on its progress in implementing its California Colorado River Water Use Plan.

Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period

[Content of 2001 ISG Section 6., Authority, is now found at Section 9., as modified herein.]

During the Interim Period, the Secretary shall coordinate the operations of Lake Powell and Lake Mead according to the strategy set forth in this Section 6. The objective of the operation of Lake Powell and Lake Mead as described herein is to avoid curtailment of uses in the Upper Basin, minimize shortages in the Lower Basin and not adversely affect the yield for development available in the Upper Basin.

The August 24-Month Study projections of the January 1 system storage and reservoir water surface elevations, for the following Water Year, shall be used to determine the applicable operational tier for the coordinated operation of Lake Powell and Lake Mead as specified in the table below.

Consistent with the provisions of this Section 6, equalization or balancing of storage in Lake Powell and Lake Mead shall be achieved as nearly as is

[6] The Benchmark Quantities in 2003 and 2006 were met.

[7] The 2009 Benchmark Quantity is modified from 3.53 maf due to construction delays that have been experienced for the All-American Canal Lining Project.

practicable by the end of each Water Year. When equalizing or balancing the contents of the reservoirs, scheduled Water Year releases from Lake Powell will be adjusted each month based on forecasted inflow, and projected September 30 Active Storage at Lake Powell and Lake Mead. In this Section 6, the term ''storage'' shall mean Active Storage.

When determining lake elevations and contents under this Section 6, no adjustment shall be made for ICS.

Coordinated operation of Lake Powell and Lake Mead as described herein will be presumed to be consistent with the Section 602(a) storage requirement contained in the Colorado River Basin Project Act.

Releases from Lake Powell for coordinated operations will be consistent with the parameters of the Record of Decision for the Glen Canyon Dam Final Environmental Impact Statement and the Glen Canyon Dam Operating Criteria (62 Fed. Reg. 9447, March 3, 1997).

Notwithstanding the quantities set forth in this Section 6, the Secretary shall evaluate and take additional necessary actions, as appropriate, at critical elevations in order to avoid Lower Basin shortage determinations as reservoir conditions approach critical thresholds. Any actions shall also be consistent with avoidance of curtailment of consumptive uses in the Upper Basin.

Lake Powell Operational Tiers
(subject to April adjustments or mid-year review modifications)

Lake Powell Elevation (feet)	Lake Powell Operational Tier	Lake Powell Active Storage (maf)
3,700		**24.32**
	Equalization Tier Equalize, avoid spills or release 8.23 maf	
3,636 – 3,666		**15.54 – 19.29**
(see table below)	**Upper Elevation Balancing Tier** release 8.23 maf; if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	(2008 – 2026)
3,575		**9.52**
	Mid-Elevation Release Tier release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	
3,525		**5.93**
	Lower Elevation Balancing Tier balance contents with a min/max release of 7.0 and 9.5 maf	
3,370		**0**

April adjustments to Lake Powell operations in the Upper Elevation Balancing Tier (as specified in Sections 6.B.3. and 6.B.4.) shall be based on the April 24-Month Study projections of the September 30 system storage and reservoir water surface elevations for the current Water Year. Any such adjustments shall not require re-initiation of the AOP consultation process. In making these projections, the Secretary shall utilize the April 1 final forecast of the April through July runoff, currently provided by the National Weather Service's Colorado Basin River Forecast Center.

A. Equalization Tier

In each Water Year, the Lake Powell equalization elevation will be as follows:

LAKE POWELL EQUALIZATION ELEVATION TABLE

Water year	Elevation (feet)
2008	3,636
2009	3,639
2010	3,642
2011	3,643
2012	3,645
2013	3,646
2014	3,648
2015	3,649
2016	3,651
2017	3,652
2018	3,654
2019	3,655
2020	3,657
2021	3,659
2022	3,660
2023	3,662
2024	3,663

LAKE POWELL EQUALIZATION ELEVATION TABLE—Continued

Water year	Elevation (feet)
2025	3,664
2026	3,666

1. In Water Years when Lake Powell elevation is projected on January 1 to be at or above the elevation stated in the Lake Powell Equalization Elevation Table, an amount of water will be released from Lake Powell to Lake Mead at a rate greater than 8.23 maf per Water Year to the extent necessary to avoid spills, or equalize storage in the two reservoirs, or otherwise to release 8.23 maf from Lake Powell. The Secretary shall release at least 8.23 maf per Water

Year and shall release additional water to the extent that the additional releases will not cause Lake Powell content to be below the elevation stated in the Lake Powell Equalization Elevation Table or cause Lake Mead content to exceed that of Lake Powell; provided, however, if Lake Powell reaches the elevation stated in the Lake Powell Equalization Elevation Table for that Water Year and the September 30 projected Lake Mead elevation is below elevation 1,105 feet, the Secretary shall release additional water from Lake Powell to Lake Mead until the first of the following conditions is projected to occur on September 30: (i) The reservoirs fully equalize; (ii) Lake Mead reaches elevation 1,105 feet; or (iii) Lake Powell reaches 20 feet below the elevation in the Lake Powell Equalization Elevation Table for that year.

B. Upper Elevation Balancing Tier

1. In Water Years when the projected January 1 Lake Powell elevation is below the elevation stated in the Lake Powell Equalization Elevation Table and at or above 3,575 feet, the Secretary shall release 8.23 maf from Lake Powell if the projected January 1 Lake Mead elevation is at or above 1,075 feet.

2. If the projected January 1 Lake Powell elevation is below the elevation stated in the Lake Powell Equalization Elevation Table and at or above 3,575 feet and the projected January 1 Lake Mead elevation is below 1,075 feet, the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release not more than 9.0 maf and not less than 7.0 maf from Lake Powell in the Water Year.

3. When operating in the Upper Elevation Balancing Tier, if the April 24-Month Study projects the September 30 Lake Powell elevation to be greater than the elevation in the Lake Powell Equalization Elevation Table, the Equalization Tier will govern the operation of Lake Powell for the remainder of the Water Year (through September).

4. When operating under Section 6.B.1, if the April 24-Month Study projects the September 30 Lake Mead elevation to be below 1,075 feet and the September 30 Lake Powell elevation to be at or above 3,575 feet, the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release not more than 9.0 maf and not less than 8.23 maf from Lake Powell in the Water Year.

5. When Lake Powell is projected to be operating under Section 6.B.2. and more than 8.23 maf is projected to be released from Lake Powell during the upcoming Water Year, the Secretary shall recalculate the August 24-Month Study projection of the January 1 Lake Mead elevation to include releases above 8.23 maf that are scheduled to be released from Lake Powell during the months of October, November, and December of the upcoming Water Year, for the purposes of determining Normal or Shortage conditions pursuant to Sections 2.A. or 2.D. of these Guidelines.

C. Mid-Elevation Release Tier

1. In Water Years when the projected January 1 Lake Powell elevation is below 3,575 feet and at or above 3,525 feet, the Secretary shall release 7.48 maf from Lake Powell in the Water Year if the projected January 1 elevation of Lake Mead is at or above 1,025 feet. If the projected January 1 Lake Mead elevation is below 1,025 feet, the Secretary shall release 8.23 maf from Lake Powell in the Water Year.

D. Lower Elevation Balancing Tier

1. In Water Years when the projected January 1 Lake Powell elevation is below 3,525 feet, the Secretary shall balance the contents of Lake Mead and Lake Powell, but shall release not more than 9.5 maf and not less than 7.0 maf from Lake Powell in the Water Year.

Section 7. Implementation of Guidelines

[Content of 2001 ISG Section 7, Modeling and Data Authority, is now found at Section 7.A., as modified herein.]

A. AOP Process

During the Interim Period, the Secretary shall utilize the AOP process to determine operations under these Guidelines concerning the coordinated operations of Lake Powell and Lake Mead pursuant to Section 6 of these Guidelines, and the allocation of apportioned but unused water from Lake Mead and the determinations concerning whether Normal, Surplus or Shortage conditions shall apply for the delivery of water from Lake Mead, pursuant to Section 1 and Section 2 of these Guidelines.

B. Consultation

The Secretary shall consult on the implementation of these Guidelines in circumstances including but not limited to the following:

1. The Secretary shall first consult with all the Basin States before making any substantive modification to these Guidelines.

2. Upon a request for modification of these Guidelines, or upon a request to resolve any claim or controversy arising under these Guidelines or under the operations of Lake Powell and Lake Mead pursuant to these Guidelines or any other applicable provision of federal law, regulation, criteria, policy, rule, or guideline, or regarding application of the 1944 Treaty that has the potential to affect domestic management of Colorado River water, the Secretary shall invite the Governors of all the Basin States, or their designated representatives, and the Department of State and USIBWC as appropriate, to consult with the Secretary in an attempt to resolve such claim or controversy by mutual agreement.

3. In the event projections included in any monthly 24-Month Study indicate Lake Mead elevations may approach an elevation that would trigger shortages in deliveries of water from Lake Mead in the United States, the Secretary shall consult with the Department of State, the USIBWC and the Basin States on whether and how the United States may reduce the quantity of water allotted to Mexico consistent with the 1944 Treaty.[8]

4. Whenever Lake Mead is below elevation 1,025 feet, the Secretary shall consult with the Basin States annually to consider whether Colorado River hydrologic conditions, together with the anticipated delivery of water to the Lower Division States and Mexico, is likely to cause the elevation of Lake Mead to fall below 1,000 feet. Upon such a consideration, the Secretary shall consult with the Basin States to discuss further measures that may be undertaken. The Secretary shall implement any additional measures consistent with applicable federal law.

5. During the Interim Period the Secretary shall consult with the Basin States regarding the administration of ICS.

6. During the Interim Period the Secretary shall consult with the Basin States regarding the creation of ICS through other extraordinary conservation measures pursuant to Section 3.A.1.h.

7. During the Interim Period the Secretary shall consult with the Basin States regarding the creation of System Efficiency ICS pursuant to Section 3.A.3.

8. The Secretary shall consult with the Basin States to evaluate actions at critical elevations that may avoid

[8] These Guidelines are not intended to constitute an interpretation or application of the 1944 Treaty or to represent current United States policy or a determination of future United States policy regarding deliveries to Mexico. The United States will conduct all necessary and appropriate discussions regarding the proposed federal action and implementation of the 1944 Treaty with Mexico through the IBWC in consultation with the Department of State.

shortage determinations as reservoir elevations approach critical thresholds.

C. Mid-Year Review

In order to allow for better overall water management during the Interim Period, the Secretary may undertake a mid-year review to consider revisions to the AOP. The Secretary shall initiate a mid-year review if requested by any Basin State or by the Upper Colorado River Commission. In the mid-year review, the Secretary may modify the AOP to make a determination that a different operational tier (Section 2.A., B., or D., or Section 6.A., B., C., or D.) than that determined in the AOP will apply for the remainder of the Year or Water Year as appropriate, or that an amount of water other than that specified in the applicable operational tier will be released for the remainder of the Year or Water Year as appropriate. The determination of modification of the AOP shall be based upon an evaluation of the objectives to avoid curtailment of uses in the Upper Basin, minimize shortages in the Lower Basin and not adversely affect the yield for development available in the Upper Basin. In undertaking such a mid-year review, the Secretary shall utilize the April 1 final forecast of the April through July runoff, currently provided by the National Weather Service's Colorado Basin River Forecast Center, and other relevant factors such as actual runoff conditions, actual water use, and water use projections. For Lake Mead, the Secretary shall revise the determination in any mid-year review for the current Year only to allow for additional deliveries from Lake Mead pursuant to Section 2 of these Guidelines.

D. Operations During Interim Period

These Guidelines implement the LROC and may be reviewed concurrently with the LROC five-year review. The Secretary will base annual determinations regarding the operations of Lake Powell and Lake Mead on these Guidelines unless extraordinary circumstances arise. Such circumstances could include operations that are prudent or necessary for safety of dams, public health and safety, other emergency situations, or other unanticipated or unforeseen activities arising from actual operating experience.

Beginning no later than December 31, 2020, the Secretary shall initiate a formal review for purposes of evaluating the effectiveness of these Guidelines. The Secretary shall consult with the Basin States in initiating this review.

Procedures will be established for implementation of ICS and DSS by Reclamation's Lower Colorado Regional Director.

Section 8. Interim Period and Termination

[Adopted January 16, 2001; Deleted and Modified December 13, 2007.]

A. Interim Period

These Guidelines will be effective upon the date of execution of the ROD for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations of Lake Powell and Lake Mead and will, unless subsequently modified, remain in effect through December 31, 2025 (through preparation of the 2026 AOP).

The Department promulgated these Guidelines based on consideration of multiple sources of information, including existing applicable guidelines, information submitted by the general public, an Agreement and recommendation submitted by the representatives of the Governors of the seven Colorado Basin States, modeling, and other information contained in environmental compliance documentation. The Secretary recognizes that the Basin States' recommendation was developed with the intent to be consistent with existing law, as addressed by Section 9 of the April 23, 2007, Agreement among the Basin States.

The Secretary recognizes that differences exist with respect to interpretations of certain provisions contained in the Law of the River and the proper application of those provisions, including, for example, Section 602(a) of the Colorado River Basin Project Act of 1968. In lieu of a formal determination regarding such disputes, the Secretary will apply the operational criteria in these Guidelines. By way of further example, positions and rights concerning the calculation of the quantity of Section 602(a) storage and releases of water from Lake Powell are reserved. The Secretary, through the adoption of these Guidelines, makes no determination with respect to the correctness of any interpretation of Section 602(a) storage and release requirements or other positions of the individual Colorado River Basin States.

Actual operations under these Guidelines shall not represent interpretations of existing law by the Secretary, nor predetermine in any manner the means of operation that the Secretary may adopt following the Interim Period. Releases from Lake Powell or Lake Mead pursuant to these Guidelines shall not prejudice the position or interests of either the Upper or Lower Division States, or any Colorado River Basin State, with respect to required storage or deliveries of water pursuant to applicable federal law, either during or after the Interim Period.

B. Effective Period—Special Provisions

1. The provisions for the delivery and accounting of ICS in Section 3 shall remain in effect through December 31, 2036, unless subsequently modified, for any ICS remaining in an ICS Account on December 31, 2026.

2. The provisions for the creation and delivery of Tributary Conservation ICS and Imported ICS in Section 3 shall continue in full force and effect until fifty years from the date of the execution of the ROD.

3. The provisions for the creation and delivery of DSS in Section 4 shall continue in full force and effect until fifty years from the date of the execution of the ROD.

C. Termination of Guidelines

Except as provided in Section 8.B., these Guidelines shall terminate on December 31, 2025 (through preparation of the 2026 AOP). At the conclusion of the effective period of these Guidelines, the operating criteria for Lake Powell and Lake Mead are assumed to revert to the operating criteria used to model baseline conditions in the Final Environmental Impact Statement for the Interim Surplus Guidelines dated December 2000 (i.e., modeling assumptions are based upon a 70R Strategy for the period commencing January 1, 2026 (for preparation of the 2027 AOP)).

Section 9. Authority

These Guidelines are issued pursuant to the authority vested in the Secretary by federal law, including the Boulder Canyon Project Act of 1928 (28 Stat. 1057), the Colorado River Storage Project Act (70 Stat. 105), and the Consolidated Decree issued by the U.S. Supreme Court in Arizona v. California, 547 U.S. 150 (2006) and shall be used to implement Articles II and III of the Criteria for the Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968 (Pub. L. 90–537), as amended.

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ORIGINAL

Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement

The State of Arizona, acting through the Arizona Department of Water Resources ("ADWR"); the Palo Verde Irrigation District ("PVID"); the Imperial Irrigation District ("IID"); The City of Needles; the Coachella Valley Water District ("CVWD"); The Metropolitan Water District of Southern California ("MWD"); the Southern Nevada Water Authority ("SNWA"); and the Colorado River Commission of Nevada enter into this Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement ("Forbearance Agreement") as follows:

Recitals

A. The purposes of this Forbearance Agreement are to:

1. Encourage the efficient use and management of Colorado River water, and to increase the water supply in Colorado River system reservoirs, through the creation, release, and use of Intentionally Created Surplus ("ICS");

2. Help avoid shortages to the Lower Basin;

3. Benefit both Lake Mead and Lake Powell;

4. Increase the surface elevations of both Lakes Powell and Mead to higher levels than would have otherwise occurred; and

5. Assure any Contractor that invests in conservation or augmentation to create ICS under this Forbearance Agreement that no Contractor within another state will claim the ICS created by the Contractor.

B. The Parties to the Forbearance Agreement and their respective authority to forbear are as follows:

1. The Arizona Department of Water Resources, through its Director, is the successor to the signatory agency of the State for the 1922 Colorado River Compact, and the 1944 Contract for Delivery of Water with the United States, both authorized and ratified by the Arizona Legislature, A.R.S. §§ 45-1301 and 1311. Pursuant to A.R.S. § 45-107, the Director is authorized and directed, subject to the limitations in A.R.S. § 45-106, for and on behalf of the State of Arizona, to consult, advise and cooperate with the Secretary of the Interior of the United States ("Secretary") with respect to the exercise by the Secretary of Congressionally authorized authority relative to the waters of the Colorado River (including, but not limited to, the Boulder Canyon Project Act of 1928, 43 U.S.C. § 617, and the Colorado River Basin Project Act of 1968, 43 U.S.C. § 1501) and with respect to the development, negotiation and execution of interstate agreements. Additionally, under A.R.S. § 45-

105(A)(9), the Director is authorized to "prosecute and defend all rights, claims and privileges of this state respecting interstate streams."

2. 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 N.R.S. §§ 277.074 and 277.120. SNWA is authorized by N.R.S. § 538.186 to enter into this Forbearance Agreement and, pursuant to its contract issued under Section 5 of the Boulder Canyon Project Act of 1928, SNWA has the right to divert ICS released by the Secretary for use within the State of Nevada pursuant to the Consolidated Decree.

3. The Colorado River Commission of the State of Nevada (CRCN) is an agency of the State of Nevada, authorized generally by N.R.S. §§ 538.041 and 538.251. CRCN is authorized by N.R.S. § 538.161 (6), (7) to enter into this Agreement. The CRCN, in furtherance of the State of Nevada's responsibility to promote the health and welfare of its people in Colorado River matters, makes this Agreement to supplement the supply of water in the Colorado River which is available for use in Nevada, augment the waters of the Colorado River, and facilitate the more flexible operation of dams and facilities by the Secretary.

4. PVID is an irrigation district created under the Palo Verde Irrigation District Act, codified at Section 33-1 et seq. of the Appendix to the California Water Code, and delivers Colorado River water in Riverside and Imperial Counties, California, pursuant to its contract issued under Section 5 of the Boulder Canyon Project Act of 1928.

5. IID is an irrigation district created under the California Irrigation District Law, codified at Section 20500 *et seq.* of the California Water Code, and delivers Colorado River water in Imperial County, California, pursuant to its contract issued under Section 5 of the Boulder Canyon Project Act of 1928.

6. CVWD is a county water district created under the California County Water District Law, codified at Section 30000 *et seq.* of the California Water Code, and delivers Colorado River water to portions of its service area in Imperial, Riverside, and San Diego Counties, California, pursuant to its contract issued under Section 5 of the Boulder Canyon Project Act of 1928 and the California Quantification Settlement Agreement.

7. MWD is a metropolitan water district created under the California Metropolitan Water District Act, codified at Section 109-1 *et seq.* of the Appendix to the California Water Code; and delivers Colorado River water to portions of its service area in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties, California, pursuant to its contracts issued under Section 5 of the Boulder Canyon Project Act of 1928.

8. The City of Needles is a charter city duly authorized and existing under and by virtue of the laws of the State of California and delivers Colorado River water, either directly or by exchange, to portions of Imperial, Riverside, and San Bernardino Counties, California, pursuant to its contracts issued under Section 5 of the Boulder Canyon Project Act of 1928,

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

Article 1
Definitions and Term

1.1 Definitions.

The definitions in the Interim Surplus Guidelines ("ISG") described in the Record of Decision dated January 16, 2001, and modified by the ROD are hereby incorporated in this Forbearance Agreement. In addition, each of the following terms shall have the meaning defined here. All defined terms shall be identified by initial letter capitalization.

A. "Certification Report" shall mean the written documentation provided by a Contractor pursuant to Article 2.5(B) that provides the Secretary with sufficient information to verify the quantity of ICS created and that the creation was consistent with the approved project exhibit, this Forbearance Agreement, the applicable Delivery Agreement, and the ROD.

B. "Colorado River System" shall have the same meaning as defined in the 1922 Colorado River Compact.

C. "Consolidated Decree" shall mean the Consolidated Decree entered by the United States Supreme Court in *Arizona v. California*, 126 S.Ct. 1543, 547 U.S. 150 (2006).

D. "Contractor" shall mean a Boulder Canyon Project Act Section 5 Contractor or an entity receiving Mainstream water pursuant to other applicable federal statute or the Consolidated Decree.

E. "Delivery Agreement" shall mean an agreement entered into by the Secretary of the Interior and one or more Contractors seeking to create ICS, providing for delivery of ICS according to the terms of this Forbearance Agreement and the ROD.

F. "Forbearance Agreement" shall mean this Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement.

G. "ICS" shall mean intentionally created surplus available for use under the terms and conditions of this Forbearance Agreement and a Delivery Agreement.

1. ICS created through extraordinary conservation, as provided for in Article 2.1 herein, shall be referred to as "Extraordinary Conservation ICS."

2. ICS created through tributary conservation, as provided for in Article 2.2 herein, shall be referred to as "Tributary Conservation ICS."

3. ICS created through system efficiency projects, as provided for in Article 2.3 herein, shall be referred to as "System Efficiency ICS."

4. ICS created through the importation of non-Colorado River System Water, as provided for in Article 2.4 herein, shall be referred to as "Imported ICS."

H. "ICS Account" shall mean a record established by the Secretary under the terms of this Forbearance Agreement, a Delivery Agreement, and the ROD.

I. "ICS Declaration" shall mean a declaration of ICS made by the Secretary pursuant to the ROD, one or more Delivery Agreements and the provisions of this Forbearance Agreement.

J. "Lower Division States" shall mean the Colorado River Basin States of Arizona, California, and Nevada.

K. "Mainstream" shall have the same meaning as defined in the Consolidated Decree.

L. "Parties" shall mean all of the signatories to this Forbearance Agreement.

M. "ROD" shall mean the Record of Decision issued by the Secretary for the Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead, Particularly Under Low Reservoir Conditions, and including the policy for implementation of ICS.

N. "Year" shall mean calendar year.

1.2 Term of the Forbearance Agreement.

This Forbearance Agreement shall commence on the date of execution by all Parties and shall terminate December 31, 2025; provided, however, that any ICS remaining in an ICS

Account on December 31, 2025, may be released as provided herein until December 31, 2035.

1.3 Extended Term for Tributary Conservation ICS and Imported ICS.

Notwithstanding Article 1.2, the provisions of this Forbearance Agreement for creation, and release in the Year of creation, of Tributary Conservation ICS under Article 2.2 and Imported ICS under Article 2.4, shall continue in full force and effect after termination of this Forbearance Agreement until the earlier of (1) the termination of the period provided in the ROD for the creation, release, and use of Tributary Conservation ICS and Imported ICS, or (2) fifty years from the date of execution of this Forbearance Agreement. The amount of Tributary Conservation ICS and Imported ICS that may be created, released, and used through the end of the extended term provided by this Article 1.3 shall not exceed the amount shown in, and shall be consistent with, the attached Exhibits A and B for Tributary Conservation ICS and Imported ICS. Such ICS may be released during the extended term as provided herein. The obligations of the Parties under Articles 2.5, 2.6, 3, 4, and 5 shall continue with regard to such ICS.

1.4 Seven Colorado River Basin States' Agreement

Notwithstanding Articles 1.2 and 1.3 above, if one or more states withdraw from the agreement dated April 23, 2007, executed by the seven Colorado River Basin states, the Parties to this Forbearance Agreement shall consult to determine whether to continue this Forbearance Agreement in effect or to amend or terminate this Forbearance Agreement. In such event, the terms of this Forbearance Agreement shall continue in effect until the Parties have consulted and agreed to continue, amend, or terminate this Forbearance Agreement. In the event of termination, all Parties shall be relieved from the terms hereof and this Forbearance Agreement shall be of no further force or effect.

Article 2
Creation and Release of ICS

2.1 Extraordinary Conservation ICS

Pursuant to procedures set forth in the ROD, any applicable Delivery Agreements, and this Forbearance Agreement, Extraordinary Conservation ICS may be created only through the following activities:

A. Fallowing of land that currently is, historically was, and otherwise would have been irrigated in the next Year.
B. Canal lining programs.
C. Desalination programs in which the desalinated water is used in lieu of Mainstream water.
D. Extraordinary conservation programs that existed on January 1, 2006.

E. Demonstration Extraordinary Conservation ICS programs pursuant to a letter agreement entered into between the United States Bureau of Reclamation and the Contractor prior to the effective date of the ROD.

F. Tributary Conservation ICS created under Article 2.2 hereto and not released in the Year created.

G. Imported ICS created under Article 2.4 hereto and not released in the Year created.

H. Other extraordinary conservation measures, including development and acquisition of a non-Colorado River System water supply used in lieu of Mainstream water within the same state, as agreed upon by the Parties pursuant to this Forbearance Agreement.

2.2 Tributary Conservation ICS

Pursuant to procedures set forth in the ROD, a Contractor may create Tributary Conservation ICS by purchasing documented water rights on Colorado River System tributaries within the Contractor's state if there is documentation that the water rights have been used for a significant period of years and that the water rights were perfected prior to June 25, 1929 (the effective date of the Boulder Canyon Project Act of 1928). The quantity of Tributary Conservation ICS that may be created shall be limited to the quantity of water set forth in Exhibit A, and shall in no event be more than the quantity of such water the Secretary verifies actually flows into Lake Mead. Any Tributary Conservation ICS not released or deducted pursuant to Article 2.5(C) in the Year it was created will be converted to Extraordinary Conservation ICS at the request of the Contractor and will be subject to all provisions of this Forbearance Agreement applicable to Extraordinary Conservation ICS.

2.3 System Efficiency ICS

Pursuant to procedures set forth in the ROD, a Contractor may make contributions of capital to the Secretary for use in Secretarial projects designed to realize efficiencies that save water that would otherwise be lost from the Mainstream in the United States. An amount of water equal to a portion of the water saved may be made available to contributing Contractors by the Secretary as System Efficiency ICS. System efficiency projects are only intended to provide temporary water supplies and System Efficiency ICS will not be available for permanent use. The System Efficiency ICS will be released to the capital contributor on a predetermined schedule of annual deliveries for a period of years as agreed by the Parties.

2.4 Imported ICS

Pursuant to procedures set forth in the ROD, a Contractor may create Imported ICS by introducing non-Colorado River System water in that Contractor's state into the Mainstream. Contractors proposing to create Imported ICS shall make sufficient arrangements with the Secretary, contractual or otherwise, to guarantee that the creation of Imported ICS shall cause no harm to the Secretary's management of the Colorado River System. These arrangements shall provide that the Contractor must obtain appropriate permits or other authorizations required by state law and that the actual amount of water introduced to the Mainstream

would be reported to the Secretary on an annual basis. Any Imported ICS not released or deducted pursuant to Article 2.5(C) in the Year it was created will be converted to Extraordinary Conservation ICS at the request of the Contractor and will be subject to all provisions of this Forbearance Agreement applicable to Extraordinary Conservation ICS.

2.5 Creation of ICS

A Contractor may create ICS subject to the following conditions:

A. Pursuant to procedures set forth in the ROD, a Contractor shall submit a plan for the creation of ICS to the Secretary and the Lower Division States demonstrating how all requirements of this Forbearance Agreement will be met in the Contractor's creation of ICS. System Efficiency ICS with an approved multi-year plan shall not require annual approval by the Secretary or consultation with the Lower Division States. Until such plan is reviewed and approved by the Secretary annually in consultation with the Lower Division States, such ICS plan, or any ICS purportedly created through it, cannot be a basis for an ICS Declaration. A Contractor may modify its plan for creation of ICS during any Year, subject to approval by the Secretary in consultation with the Lower Division States.

B. Pursuant to procedures set forth in the ROD, a Contractor that creates ICS shall submit a Certification Report to the Secretary demonstrating the amount of ICS created and that its creation was consistent with this Forbearance Agreement and the ROD. The Secretary shall verify the information in the Certification Report in consultation with the Lower Division States, and provide a final written decision to the Parties. Any Party may appeal the Secretary's verification of the Certification Report through administrative and judicial processes.

C. There shall be a one-time deduction of five percent (5%) from the amount of ICS in the Year of its creation. This deduction results in additional water in storage in Lake Mead for future use in accordance with the Consolidated Decree, the Interim Surplus Guidelines, and the ROD. This provision shall not apply to:

   1. System Efficiency ICS created pursuant to Article 2.3 of this Forbearance Agreement because a large portion of the water saved by this type of project will increase the quantity of water in storage.
   2. Extraordinary Conservation ICS created by conversion of Tributary Conservation ICS that was not released in the Year created, pursuant to Article 2.1(F) of this Forbearance Agreement, because 5% of the ICS is deducted at the time the Tributary Conservation ICS is created.
   3. Extraordinary Conservation ICS created by conversion of Imported ICS that was not released in the Year created, pursuant to Article 2.1(G) of this Forbearance Agreement, because 5% of the ICS is deducted at the time the Imported ICS is created.

D. In addition to the conditions described above, creation of Extraordinary Conservation ICS is subject to the following conditions:

1 Except as provided in Articles 2.2 and 2.4, Extraordinary Conservation ICS can only be created if such water would have otherwise been beneficially used.

2. The maximum total amount of Extraordinary Conservation ICS that can be created during any Year is limited to the following:
   a. 400,000 acre-feet for California Contractors;
   b. 125,000 acre-feet for Nevada Contractors; and
   c. 100,000 acre-feet for Arizona Contractors.

3. The maximum quantity of Extraordinary Conservation ICS that may be accumulated in all ICS Accounts, at any time, is limited to the following:
   a. 1,500,000 acre-feet for California Contractors;
   b. 300,000 acre-feet for Nevada Contractors; and
   c. 300,000 acre-feet for Arizona Contractors.

4. Except as provided in Articles 2.2 and 2.4, no category of surplus water can be used to create Extraordinary Conservation ICS.

5. The quantity of Extraordinary Conservation ICS remaining in an ICS Account at the end of each Year shall be diminished by annual evaporation losses, as determined by the Secretary in consultation with the Lower Division States, provided that such losses shall not exceed three percent (3%). Losses shall be applied annually to the end-of-the-Year balance of Extraordinary Conservation ICS beginning in the Year after the ICS is created and continuing until no Extraordinary Conservation ICS remains in Lake Mead. No evaporation losses shall be assessed during a Year in which the Secretary has declared a shortage.

6. Extraordinary Conservation ICS from a project within a state may only be credited to the ICS Account of a Contractor within that state that has funded or implemented the project creating the ICS, or to the ICS Account of a Contractor within the same state as the funding entity and project and with written agreement of the funding entity.

2.6 Request for Release of ICS

A Contractor that has created ICS may request that the Secretary release its ICS subject to the following conditions:

A. If a Contractor has an overrun payback obligation, as described in the October 10, 2003 Inadvertent Overrun and Payback Policy or Exhibit C to the October 10, 2003 Colorado River Water Delivery Agreement, the Contractor must pay the overrun payback obligation in full before requesting or receiving a release of any ICS. The Contractor may request that the amount of ICS in the Contractor's ICS Account be reduced by the amount of the overrun payback obligation in order to pay the overrun payback obligation.

B. ICS shall only be released pursuant to an ICS Declaration.

C. In addition to the conditions described above, a Contractor's request for release of Extraordinary Conservation ICS is subject to the following conditions:

1. The total amount of Extraordinary Conservation ICS that may be released in any Year is limited to the following:
   a. 400,000 acre-feet for California Contractors;
   b. 300,000 acre-feet for Nevada Contractors; and
   c. 300,000 acre-feet for Arizona Contractors;
2. If the May, 24-month study for that Year indicates that a shortage condition would be declared in the succeeding Year if the requested amounts for the current Year under Article 2.6 were released, the Secretary may release less than the amounts of ICS requested to be released.
3. If the Secretary releases Flood Control Surplus water, Extraordinary Conservation ICS accumulated in ICS Accounts shall be reduced by the amount of the Flood Control Surplus on an acre-foot for acre-foot basis until no Extraordinary Conservation ICS remains. The reductions to the ICS Accounts shall be shared on a pro-rata basis among all Contractors that have accumulated Extraordinary Conservation ICS unless otherwise agreed to by the Contractors.

2.7 Additional Terms Regarding Creation and Release of ICS

It is the specific intent of the Parties that the terms, conditions and procedures regarding the creation and release of ICS contained in this Article 2 will be applied in conformance with additional terms, conditions and procedures governing the creation and release of ICS contained in any Delivery Agreement.

Article 3
Forbearance

3.1 In the absence of forbearance, surplus water is apportioned for use according to the percentages provided in Article II(B)(2) of the Consolidated Decree. The Parties respectively agree as follows:

A. ADWR hereby forbears:

1. Any right the State of Arizona may have to delivery of any ICS released in accordance with the terms and conditions set forth in this Forbearance Agreement and any applicable Delivery Agreement for use within the State of California or the State of Nevada.
2. Any right the State of Arizona may have to the release and delivery of water for direct delivery domestic use to entities in California or Nevada under a Domestic Surplus as described in any applicable Delivery Agreement and the ROD.

B. PVID, IID, CVWD, the City of Needles and MWD hereby forbear:

1. Any right they may have to delivery of any ICS released in accordance with the terms and conditions set forth in this Forbearance Agreement and any applicable Delivery Agreement for use within the State of Arizona or the State of Nevada.
2. Any right they may have to the release and delivery of water for direct delivery domestic use to entities in Arizona or Nevada under a Domestic Surplus as described in any applicable Delivery Agreement and the ROD.

C. SNWA and CRCN hereby forbear:
1. Any right SNWA or the State of Nevada may have to delivery of any ICS released in accordance with the terms and conditions set forth in this Forbearance Agreement and any applicable Delivery Agreement for use within the State of Arizona or the State of California.
2. Any right SNWA or the State of Nevada may have to the release and delivery of water for direct delivery domestic use to entities in Arizona or California under a Domestic Surplus as described in any applicable Delivery Agreement and the ROD.

3.2 Notwithstanding the foregoing forbearance of ICS, the Parties only forbear with respect to ICS that is created pursuant to exhibits attached to and incorporated within this Forbearance Agreement. This Forbearance Agreement incorporates Exhibits A through O as of the date of execution. Additional exhibits may be added to this Forbearance Agreement after written approval of all of the Parties. Such approval shall not be unreasonably withheld.

3.3 The Parties do not forbear any right to the release or delivery of any water that is not described in Article 3.1.

3.4 Forbearance of all Parties is conditioned on the following:

A. The execution, by the Secretary and any Contractor seeking to create ICS, of a Delivery Agreement providing that the Parties to this Forbearance Agreement are third-party beneficiaries of such Delivery Agreement.

B. The adoption by the Secretary of a ROD implementing an ICS program in substantial conformance with the provisions of this Forbearance Agreement and any Delivery Agreement.

C. The continued implementation of an ICS program that is in substantial conformance with this Forbearance Agreement and any Delivery Agreement, including:
1. The availability of the verification and appeal process described in Article 2.5(B);
2. The establishment and use of an ICS accounting procedure by the Secretary consistent with this Forbearance Agreement and any Delivery Agreement;
3. The Secretary's annual declaration of Normal, Surplus (other than Quantified Surplus), or Shortage conditions based on conditions in Lake Mead with consideration of the amount of ICS accumulated by the Parties. The determination of the amount of Quantified

Surplus shall not include the volume of accumulated Extraordinary Conservation ICS; and

4. The termination of Partial Domestic Surplus as defined in the Record of Decision dated January 16, 2001, upon issuance of the ROD.

Article 4
General Provisions

4.1 The records of any Party to this Forbearance Agreement that relate to the creation of ICS shall be open to inspection by any other Party.

4.2 The Parties to this Forbearance Agreement are hereby notified of A.R.S. § 38-511.

4.3 The Parties agree to comply with all applicable federal or state laws relating to equal opportunity and non-discrimination.

4.4 Except as provided in Article 3, including additional exhibits agreed upon by the Parties pursuant to Article 3.2, nothing in this Forbearance Agreement shall be deemed to diminish or waive the rights of any Party. The failure of any Party to enforce a provision of this Forbearance Agreement shall not be deemed to constitute a waiver of that provision. The execution of, and forbearance in compliance with, this Forbearance Agreement shall not be admissible against any Party in any action except for an action to enforce the terms of this Forbearance Agreement or a Delivery Agreement.

4.5 No Party to this Forbearance Agreement shall be considered to be in default in the performance of any obligations under this Forbearance Agreement when a failure of performance shall be due to uncontrollable forces. The term "uncontrollable force" shall mean any cause beyond the control of the party unable to perform such obligation, including but not limited to failure or threat of failure of facilities, flood, earthquake, storm, fire, lightning, and other natural catastrophes, epidemic, war, civil disturbance or disobedience, strike, labor dispute, labor or material shortage, sabotage, restraint by order of a court or regulatory agency of competent jurisdiction, and action or non-action by, or failure to obtain the necessary authorizations or approvals from, a federal governmental agency or authority, which by exercise of due diligence and foresight such party could not reasonably have been expected to overcome. Nothing contained herein shall be construed to require any party to settle any strike or labor dispute in which it is involved.

4.6 The Colorado River Board of California is created by, and operates under, California Water Code sections 12500 et seq. The California Water Code charges the CRB and its officers with the duty to confer with representatives of other States in the Colorado River basin, representatives of the United States, and others

concerning problems and measures relating to the development of the Colorado River Basin, the use of the water of the Colorado River System, and the protection of the interests therein of the State, and to negotiate and to make recommendations respecting such problems and measures. Under this authority, the CRB through its officers has participated in the negotiation of, and has made recommendations concerning, this Agreement and its exhibits. Although the CRB and the State of California are not Parties to this Agreement, the Parties agree to include the CRB and its officers in any consultations under this Agreement and in any negotiations related to amendment of this Agreement and its exhibits, including the addition of exhibits under Article 3.2.

Article 5
Notices

5.1 Notices and Requests

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

CRCN:
Colorado River Commission of Nevada
555 E. Washington Ave., Suite 3100
Las Vegas, NV 89101
Attn: Executive Director, Colorado River Commission

SNWA:
Southern Nevada Water Authority
1001 S. Valley View Boulevard
Las Vegas, NV 89153
Attn: General Manager

PVID:
Palo Verde Irrigation District
180 West 14th Avenue
Blythe, CA 92225
Attn: General Manager

IID:
Imperial Irrigation District
333 E. Barioni Boulevard
Imperial, CA 92251
Attn: General Manager

CVWD:
Coachella Valley Water District
P. O. Box 1058
Coachella, CA 92236
Attn: General Manager/Chief Engineer

City of Needles:
City of Needles
817 Third Street
Needles, CA 92363-2933
Attention: City Manager

MWD:
The Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012
Attn: General Manager

State of California:
Colorado River Board of California
770 Fairmont Avenue, Suite 100
Glendale, CA 91203-1068
Attn: Executive Director

State of Arizona:
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012
Attn: Director

B. Any Party may, at any time, change its mailing address by notice to the other Parties.

5.2 Notices and Requests by Facsimile

A. Notices and requests may be given by facsimile among the Parties in lieu of first class mail as provided in Article 5.1. Such facsimiles shall be deemed complete upon a receipt from the sender's facsimile machine indicating that the transmission was satisfactorily completed and after phone communication with administrative offices of the recipient notifying the recipient that a facsimile has been sent.

B. The facsimile numbers of the entities listed in Article 5.1(A) are as follows:

State of Arizona: (602) 771-8681 (Attn: Director)

SNWA	(702) 258-3268 (Attn: General Manager)
CRCN	(702) 486-2670 (Attn: Executive Director, Colorado River Commission)
PVID	(760) 922-8294 (Attn: General Manager)
IID	(760) 339-9392 (Attn: General Manager)
CVWD	(760) 398-3711 (Attn: General Manager/Chief Engineer)
City of Needles	(760) 326-6765 (Attn: Mayor/City Manager)
MWD	(213) 217-5704 (Attn: General Manager)
CRB	(818) 543-4685 (Attn: Executive Director)

C. Any Party may, at any time, change its facsimile number by notice to the other Parties.

In Witness of this Forbearance Agreement, the Parties affix their official signatures below, acknowledging execution of this document on the 13 day of December, 2007.

Approved as to form:

By: _____
W. Patrick Schiffer
Chief Counsel

THE STATE OF ARIZONA acting through the ARIZONA DEPARTMENT OF WATER RESOURCES

By: _____
Herbert Guenther
Director

Attest:

By: _____
Edward W. Smith
General Manager

PALO VERDE IRRIGATION DISTRICT

By: _____
Charles VanDyke
Chair

Attest and Approved:

By: _____
John Penn Carter
Legal Counsel

IMPERIAL IRRIGATION DISTRICT

By: _____
Stella Altamirano-Mendoza
President

Approved as to form:

By: _____
Robert Hargreaves
City Attorney

THE CITY OF NEEDLES

By: _____
Jeff Williams
Mayor

Approved as to form:

By: _____
Steven B. Abbott
Legal Counsel

COACHELLA VALLEY WATER DISTRICT

By: _____
Steven B. Robbins
General Manager/Chief Engineer

Approved as to form:

By: _____
Karen L. Tachiki
General Counsel

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Jeffrey Kightlinger
General Manager

Approved as to form:

By: _____
John J. Entsminger
Deputy General Counsel

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Patricia Mulroy
General Manager

Approved as to form:

By: _____
Jennifer T. Crandell
Deputy Attorney General

COLORADO RIVER COMMISSION OF NEVADA

By: _____
George M. Caan
Executive Director

Exhibit 1 to the Lower Basin Drought Contingency Plan Agreement

LOWER BASIN DROUGHT CONTINGENCY OPERATIONS

I. Relationship to 2007 Interim Guidelines and Implementing Agreements

These Lower Basin Drought Contingency Operations (LBOps) shall, in addition to the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (2007 Interim Guidelines) and the Implementing Agreements accompanying the 2007 Interim Guidelines, govern the operation of Lake Mead for the various periods set forth herein and as otherwise set forth in the 2007 Interim Guidelines. Terms defined in Section XI.F of the 2007 Interim Guidelines shall have the same meaning when used in these LBOps. In the event of any inconsistency between the provisions of the 2007 Interim Guidelines and Implementing Agreements on the one hand, and these LBOps on the other, the provisions of these LBOps shall control; provided, however, that nothing herein shall be construed to impact the implementation of coordinated operations of Lakes Powell and Mead during the Interim Period as set forth in Section XI.G.6 of the 2007 Interim Guidelines. California Contractors that are Parties to the Lower Basin Drought Contingency Plan Agreement (LB DCP Agreement) shall be subject to provisions of these LBOps. California Contractors that are not Parties to the LB DCP Agreement shall not be subject to the provisions of these LBOps but shall instead remain subject to all of the applicable terms and conditions of the 2007 Interim Guidelines.

II. Definitions

"**Binational ICS"** shall mean Binational Intentionally Created Surplus as that term is used in the Interim Operating Agreements for Minutes 319 and 323 to the 1944 Mexican Water Treaty.

"**Creation of Non-ICS Water"** under these LBOps occurs when, and to the extent, the amount of Colorado River water available for use by a State in a given Year under Article II.B of the Consolidated Decree (after adjustments for reductions, Developed Shortage Supply creation or delivery, and ICS creation or delivery under the 2007 Interim Guidelines), exceeds the amount of Colorado River mainstream water consumptively used by that State in such Year. Such water shall not be DCP ICS.

"**DCP Contributions**" shall mean those contributions benefiting Lake Mead through any of the following:

- Conversion of existing Extraordinary Conservation ICS to DCP ICS
- Conversion of Extraordinary Conservation, System Efficiency, or Binational ICS created after the effective date of these LBOps to DCP ICS

- Simultaneous creation and conversion of Extraordinary Conservation, System Efficiency, or Binational ICS to DCP ICS
- Creation of Non-ICS Water

"**DCP ICS**" shall mean Intentionally Created Surplus converted from Extraordinary Conservation ICS, System Efficiency ICS, or Binational ICS as set forth in these LBOps. Reductions in Colorado River water available to a State pursuant to Section XI.G.2.D of the 2007 Interim Guidelines shall not constitute DCP ICS.

"**DCP ICS Account**" shall mean records established by the Secretary regarding DCP ICS.

"**Effective Date**" means the date first set forth in the LB DCP Agreement.

"**Intra-State DCP Agreements**" means agreements among, as appropriate, the United States, a Lower Division State, Contractors, Tribes and local government entities within such state setting forth the relative rights and obligations among Contractors within the state regarding DCP Contributions.

III. Operational Provisions

A. Reservoir Elevation Projections

In making projections of Lake Mead water surface elevations as required throughout these LBOps, the Secretary shall use the Bureau of Reclamation's August 24-Month Study for the most probable inflows unless expressly provided otherwise herein.

B. DCP Contributions

In addition to any reductions provided in Section XI.G.2.D. of the 2007 Interim Guidelines, from the Effective Date of these LBOps through December 31, 2025 (through preparation of the 2026 AOP), and consistent with applicable Intra-State DCP Agreements, the States of Arizona, California, and Nevada, shall make DCP Contributions as follows:

1. ***Arizona***

a. Lake Mead January 1 elevation projected to be above 1,045 feet and at or below 1,090 feet

In Years when Lake Mead elevation is projected to be above 1,045 feet and at or below 1,090 feet on January 1, the State of Arizona shall make annual DCP Contributions in the total amount of 192,000 acre-feet.

b. Lake Mead January 1 elevation projected to be at or below 1,045 feet

In Years when Lake Mead elevation is projected to be at or below 1,045 feet on January 1, the State of Arizona shall make annual DCP Contributions in the total amount of 240,000 acre-feet.

2. ***Nevada***

   a. Lake Mead January 1 elevation projected to be above 1,045 feet and at or below 1,090 feet

      In Years when Lake Mead elevation is projected to be above 1,045 feet and at or below 1,090 feet on January 1, the State of Nevada shall make annual DCP Contributions in the total amount of 8,000 acre-feet.

   b. Lake Mead January 1 elevation projected to be at or below 1,045 feet

      In Years when Lake Mead elevation is projected to be at or below 1,045 feet on January 1, the State of Nevada shall make annual DCP Contributions in the total amount of 10,000 acre-feet.

3. ***California***

   a. Lake Mead January 1 elevation projected to be above 1,040 feet and at or below 1,045 feet

      In Years when Lake Mead elevation is projected to be above 1,040 feet and at or below 1,045 feet on January 1, the State of California shall make annual DCP Contributions in the total amount of 200,000 acre-feet.

   b. Lake Mead January 1 elevation projected to be above 1,035 feet and at or below 1,040 feet

      In Years when Lake Mead elevation is projected to be above 1,035 feet and at or below 1,040 feet on January 1, the State of California shall make annual DCP Contributions in the total amount of 250,000 acre-feet.

   c. Lake Mead January 1 elevation projected to be above 1,030 feet and at or below 1,035 feet

      In Years when Lake Mead elevation is projected to be above 1,030 feet and at or below 1,035 feet on January 1, the State of California shall make annual DCP Contributions in the total amount of 300,000 acre-feet.

   d. Lake Mead January 1 elevation projected to be at or below 1,030 feet

      In Years when Lake Mead elevation is projected to be at or below 1,030 feet on January 1, the State of California shall make annual DCP Contributions in the total amount of 350,000 acre-feet.

4. ***DCP Contributions for the benefit of another State***

Contractors within one or more Lower Division States may make all or any portion of the DCP Contributions required of another Lower Division State under this Section III.B or DCP ICS repayment as required under Section III.F, provided:

(i) agreement by the necessary Parties in each of the Lower Division States to any such contribution(s) is made in writing consistent with any applicable Intra-State DCP Agreements. Such agreement shall only be required of Parties to the LB DCP Agreement, non-Party consent is not required;

(ii) drafts of such agreements are provided to the Secretary and the Upper Division States prior to any required board authorizations;

(iii) DCP Contributions on behalf of another State through conversion of ICS to DCP ICS shall accrue to the DCP ICS Accounts of applicable Contractors in the contributing State and not the State on whose behalf the contribution is made; and

(iv) notwithstanding the foregoing subsection (iii), the volume of any DCP ICS contributions made for the benefit of another State shall count against the storage limit set forth in Section IV.C below and the ICS delivery limit set forth in Section IV.D below of the State on whose behalf the contribution is made and not the contributing State.

C. Combined DCP Contributions and 2007 Interim Guidelines Shortages

For purposes of illustrating the combined DCP Contributions volumes set forth in these LBOps and the shortages required under Section XI.G.2.D of the 2007 Interim Guidelines, Table 1 combines the applicable volumes by elevation for each State.

Table 1 – DCP Contributions and 2007 Interim Guidelines Shortages by State

Projected January 1 Lake Mead Elevation *(feet msl)*	**2007 Interim Guidelines Shortages**		**DCP Contributions**			**Combined Volumes** *(2007 Interim Guidelines Shortages & DCP Contributions)*			
	Arizona	**Nevada**	**Arizona**	**Nevada**	**California**	**Arizona**	**Nevada**	**California**	**Lower Division States Total**
	(thousand acre-feet)								
At or below 1,090 and above 1,075	0	0	192	8	0	192	8	0	200
At or below 1,075 and at or above 1,050	320	13	192	8	0	512	21	0	533
Below 1,050 and above 1,045	400	17	192	8	0	592	25	0	617
At or below 1,045 and above 1,040	400	17	240	10	200	640	27	200	867
At or below 1,040 and above 1,035	400	17	240	10	250	640	27	250	917
At or below 1,035 and above 1,030	400	17	240	10	300	640	27	300	967
At or below 1,030 and at or above 1,025	400	17	240	10	350	640	27	350	1,017
Below 1,025	480	20	240	10	350	720	30	350	1,100

D. Water Deliveries/DCP Contributions

1. ***Process regarding DCP Contributions***

In any year that DCP Contributions are required, the Secretary shall meet and confer at least once each quarter with any Contractor that is required to make DCP Contributions (consistent with applicable Intra-State DCP Agreements) for the purpose of ensuring that the best available information regarding DCP Contribution status and the source of the DCP Contribution is available to both the Secretary and the affected Contractor. The Secretary shall consult upon request with any other Contractor regarding the implementation of DCP Contributions.

2. ***Delivery Schedule Adjustments***

The Secretary shall adjust as necessary any scheduled deliveries of Colorado River water in a manner that ensures each State's DCP Contributions are within 25,000 acre-feet of the amounts set forth in Section III.B by the end of the Year in which such DCP Contributions are required. Such adjustments shall be in accordance with any Intra-State DCP Agreements. Prior to making any delivery schedule adjustment pursuant to this section, the Secretary shall provide the affected Contractor the maximum practicable notice and an opportunity to meet and confer with the Secretary.

3. ***DCP Contributions Not Surplus***

The Secretary shall not release pursuant to Article II.B of the Consolidated Decree any DCP Contribution during the Year of the DCP Contribution.

E. DCP Contributions Accounting Matters

1. ***DCP Contributions***

On an annual basis, the Secretary shall document and publish in its Accounting Report pursuant to Article V of the Consolidated Decree, the amount of each of the DCP Contributions made pursuant to these LBOps.

2. ***DCP ICS and System Benefit***

a. In the annual Water Accounting Report the Secretary shall separately account for and verify the creation and delivery of DCP ICS in a manner consistent with Section XI.G.3.D of the 2007 Interim Guidelines.

b. Any delivery of DCP ICS pursuant to Section III.F of these LBOps shall be limited to amounts documented and published by the Secretary pursuant to this Section III.E.2.

c. Beginning in 2027, and each Year thereafter, the Secretary shall diminish each DCP ICS Account by three percent (3%) for the benefit of the Colorado River System.

d. The provisions for DCP ICS accounting shall remain in effect through December 31, 2057, for any amounts remaining to be delivered on December 31, 2026.

3. ***Conversion of Excess DCP ICS to ICS***

In the event Lake Mead's January 1 elevation in a given Year is higher than that projected in the preceding August 24-Month Study, any DCP ICS creation that

would not have occurred in such Year if the DCP Contribution had been determined based on Lake Mead's actual January 1 elevation rather than a projection will instead remain available as the type of ICS originally created to the extent such volumes are the result of conservation actions consistent with ICS Exhibits to the 2007 Lower Colorado River Basin Intentionally Created Surplus Agreement (2007 ICS Agreement).

4. ***DCP Contribution Deficiency***

Notwithstanding Section III.D.2, above, in the event that any final Water Accounting Report indicates that a State's DCP Contribution in any prior Year is less than the exact amount required in Section III.B above, the State shall make DCP Contributions in the amount of the deficiency during the Year in which such final Water Accounting Report is published in addition to any DCP Contributions required by Section III.B for that Year.

5. ***Cumulative DCP Contributions Accounting***

If at any time the cumulative volume of DCP Contributions is greater than or equal to 3.35 million acre-feet of contributions from Arizona, California and Nevada, the Secretary shall separately account for all such volumes in excess of 3.35 million acre-feet, and such volumes shall be available for delivery pursuant to Section III.F notwithstanding Section IV.C, below.

F. Delivery of DCP ICS

1. ***Annual Limits***

Delivery of DCP ICS pursuant to this Section III.F shall be combined with and count toward the limitations on delivery of ICS set forth in Section XI.G.3.C.4 of the 2007 Interim Guidelines.

2. ***Effective Period of Annual limits***

The annual limitations on delivery set forth in Section III.F.1 above shall remain in effect through December 31, 2057, for any amounts remaining to be recovered on December 31, 2026.

3. ***Delivery of DCP ICS through December 31, 2026; repayment obligations***

a. Lake Mead January 1 elevation projected to be above 1,110 feet

In Years when Lake Mead's January 1 elevation is projected to be above 1,110 feet, the States of Arizona, California and Nevada shall be permitted to schedule delivery of DCP ICS without any repayment obligation.

b. Lake Mead January 1 elevation projected to be above 1,025 feet and at or below 1,110 feet

In Years when Lake Mead's January 1 elevation is projected to be above 1,025 feet and at or below 1,110 feet, the States of Arizona, California and Nevada shall be permitted to have short-term access to existing DCP ICS (adjusted to reflect any borrowing or repayment pursuant to this Section) as reflected in the most recent final Water Accounting Report, with the obligation that such volumes be repaid by December 31 of the Year following delivery. If there are insufficient repayments, the Secretary shall make appropriate delivery schedule adjustments consistent with Section III.D.2 to ensure that DCP ICS delivered pursuant to this Section III.F.3.b is fully and timely repaid.

c. Lake Mead January 1 elevation projected to be at or below 1,025 feet

In Years when Lake Mead's January 1 elevation is projected to be at or below 1,025 feet, delivery of DCP ICS shall not be permitted.

4. ***Delivery of DCP ICS from January 1, 2027, through December 31, 2057; repayment obligations***

a. Lake Mead January 1 elevation projected to be above 1,110 feet

In Years when Lake Mead's January 1 elevation is projected to be above 1,110 feet, the States of Arizona, California and Nevada shall be permitted to schedule delivery of DCP ICS without any repayment obligation.

b. Lake Mead January 1 elevation projected to be above 1,075 feet and at or below 1,110 feet

In Years when Lake Mead's January 1 elevation is projected to be above 1,075 feet and at or below 1,110 feet, the States of Arizona, California and Nevada may schedule delivery of DCP ICS and shall, not later than the fourth Year following the Year in which the water was delivered, elect one of the following repayment options:

1. Repay such quantities before or during the fifth Year following the Year in which the water was delivered; or

2. Instruct the Secretary to reduce the DCP ICS Account from which the water was borrowed by an additional twenty percent (20%) of the amount borrowed before or during the fifth Year following the Year the water was delivered.

In the event there is insufficient DCP ICS repaid under option 1, or insufficient DCP ICS in the DCP ICS Account to make the adjustment contemplated in option 2, the Secretary shall make appropriate delivery schedule adjustments consistent with Section III.D.2 to ensure that DCP ICS delivered pursuant to this Section III.F.4.b is fully repaid by the end of the fifth Year following the Year in which it was delivered.

c. Lake Mead January 1 elevation projected to be above 1,025 feet and at or below 1,075 feet

In Years when Lake Mead's January 1 elevation is projected to be above 1,025 feet and at or below 1,075 feet, the States of Arizona, California and Nevada shall be permitted to have short-term access to existing DCP ICS (adjusted to reflect any borrowing or repayment pursuant to this Section) as reflected in the most recent final Water Accounting Report, with the obligation to repay any such quantities by December 31 of the Year following the Year in which the water was delivered. If there are insufficient repayments, the Secretary shall make appropriate delivery schedule adjustments consistent with Section III.D.2 to ensure that DCP ICS delivered pursuant to this Section III.F.4.c is fully and timely repaid.

d. Lake Mead January 1 elevation projected to be at or below 1,025 feet

In Years when Lake Mead's January 1 elevation is projected to be at or below 1,025 feet, delivery of DCP ICS shall not be permitted.

5. ***No System Assessment for DCP ICS Repayments***

There shall be no system assessment on the creation of any ICS for conversion to DCP ICS as repayment pursuant to Sections III.F.3.b, III.F.4.b, and III.F.4.c above.

IV. Incentives for Enhanced Creation of Intentionally Created Surplus Benefitting Lake Mead

A. Provisions Relating to System and Evaporation Assessments

1. ***Total assessed losses – existing Extraordinary Conservation ICS***

The amount of Extraordinary Conservation ICS available as of the Effective Date in each ICS Account maintained by the Secretary is provided in the table attached hereto as Appendix "1" and incorporated herein by this reference. On the Effective Date, the Secretary shall assess additional losses as necessary such that the total assessed losses (including both system assessments and evaporation) for all ICS set forth in Appendix 1 is ten percent (10%). Through December 31, 2026, these volumes shall not be subject to any further assessments for system or evaporation losses.

2. ***Total assessed losses – Extraordinary Conservation, Tributary, or Imported ICS created after the Effective Date***

There shall be a one-time deduction of ten percent (10%) of any Extraordinary Conservation, Tributary, or Imported ICS created after the Effective Date. Through December 31, 2026, these volumes shall not be subject to any further assessments for system or evaporation losses.

3. ***Replenishment Incentive***

   Notwithstanding Section IV.A.2 above, there shall be no assessment made upon the creation of Extraordinary Conservation ICS to the extent of the volume of Extraordinary Conservation ICS delivered to the same Contractor in the preceding Year.

4. ***Total assessed losses – System Efficiency ICS***

   System assessments and evaporation losses for System Efficiency projects created after the Effective Date, if any, will be determined on a case-by-case basis through exhibits to forbearance agreements.

B. Creation Limits Flexibility Consultation

If one but not all of the Lower Division States reaches its annual Extraordinary Conservation ICS creation limit as set forth in Section XI.G.3.B.4 of the 2007 Interim Guidelines, and if there remains a desire to create additional amounts of Extraordinary Conservation ICS, the Secretary, provided there is no objection by any Lower Division State not reaching its annual limit, may authorize additional Extraordinary Conservation ICS creation within the total annual limitation set forth in Section XI.G.3.B.4 of the 2007 Interim Guidelines (625,000 acre-feet).

C. Storage Limits Augmentation and Sharing

The maximum total amount of Extraordinary Conservation ICS, Binational ICS, and DCP ICS that may be accumulated in all ICS Accounts, at any time, is limited to the following:

1. 1.7 million acre-feet for California Contractors

2. 500 thousand acre-feet for Nevada Contractors

3. 500 thousand acre-feet for Arizona Contractors

Notwithstanding the foregoing, the appropriate Parties in Arizona, California, and Nevada may agree that one or more Lower Division State may make available ICS accumulation space within the limits set forth above to another Lower Division State for use by such state's Contractors; provided (i) such agreements are in writing; and (ii) drafts of such agreements are provided to the Secretary and the Upper Division States prior to any required board authorizations.

D. Delivery of ICS

In addition to any Developed Shortage Supply, Extraordinary Conservation ICS, Binational ICS, and System Efficiency ICS shall be available for delivery as follows:

1. ***Lake Mead January 1 elevation projected to be above 1,045 feet and at or below 1,075 feet***

In Years when Lake Mead's January 1 elevation is projected to be above 1,045 feet and at or below 1,075 feet, the combined total delivery of Extraordinary Conservation ICS, Binational ICS, System Efficiency ICS and DCP ICS shall be limited to the quantities set forth in Section XI.G.3.C.4 of the 2007 Interim Guidelines.

2. ***Lake Mead January 1 elevation projected to be above 1,025 feet and at or below 1,045 feet***

   In Years when Lake Mead's January 1 elevation is projected to be above 1,025 feet and at or below 1,045 feet, the combined total delivery of Extraordinary Conservation ICS, Binational ICS, System Efficiency ICS, DCP ICS, and the conversion of ICS to DCP ICS shall be limited to the quantities identified in Section XI.G.3.C.4 of the 2007 Interim Guidelines.

3. ***Lake Mead January 1 elevation projected to be at or below 1,025 feet***

   In Years when Lake Mead's January 1 elevation is projected to be at or below 1,025 feet, delivery of Extraordinary Conservation ICS, Binational ICS and System Efficiency ICS shall not be permitted.

E. Additional Cooperative Measures

1. Notwithstanding anything to the contrary within 43 C.F.R. Part 414 (Offstream Storage Of Colorado River Water And Development And Release Of Intentionally Created Unused Apportionment In The Lower Division States), interstate water transactions shall be permitted in Years when Lake Mead's January 1 elevation is projected to be above 1,045 feet.

2. On or before the Effective Date, the party to the LB DCP Agreement from Arizona, the parties to the LB DCP Agreement from California, and the parties to the LB DCP Agreement from Nevada shall identify, for their respective States, such new or modified ICS Exhibits from that State that are necessary to implement the provisions of the LB DCP Agreement and these LBOps, and the Secretary shall approve and implement such new or modified ICS Exhibits. After the Effective Date, any new or modified ICS Exhibits shall only become effective pursuant to the provisions of the 2007 ICS Agreement.

3. The Secretary shall only deliver ICS created under the ICS Exhibits approved pursuant to Section IV.E.2 to the Contractor that created such ICS, or as otherwise directed by that Contractor subject to the 2007 Interim Guidelines.

4. The Secretary shall ensure that no other Contractor may claim as surplus under Article II.B of the Consolidated Decree any ICS created under the ICS Exhibits approved pursuant to Section IV.E.2.

F. Additional Intentional Conservation

The Secretary shall not release pursuant to Article II of the Consolidated Decree water intentionally conserved by a conservation program within a Lower Division State in which the Secretary participates and that results in reductions in consumptive use.

V. LBOps Implementation

A. AOP Process

The Secretary shall utilize the AOP process to determine operations under these LBOps in addition to those pursuant to the 2007 Interim Guidelines.

B. Consultation

The Secretary shall consult with the Lower Division States on the implementation of these LBOps in circumstances including, but not limited to, the following:

1 . If any 24-Month Study for the most probable inflows projects that Lake Mead will reach an elevation of 1,075 feet or below by December 31 of the Year in which such study is produced, the Secretary and Lower Division States shall meet and consult at least twice annually to review current and projected operations and associated projected Lake Mead elevations, and to consider whether any adjustments to projected Lower Basin operations are prudent or necessary.

2 . A position has not been formally expressed regarding a goal of operationally protecting a specific elevation of Lake Mead. In light of the foregoing, and for their individual and mutual benefit, the parties to the LB DCP Agreement have formally acknowledged their commitment to individual and collective action in the Lower Basin to avoid and protect against the potential for the elevation of Lake Mead to decline to elevations below 1,020 feet. Such parties made these commitments recognizing the individual and collective harm that could occur from prolonged interruptions in Lower Basin water supplies from the Colorado River and will implement the commitment identified in this paragraph as follows:

If any 24-Month Study for the minimum probable inflows projects that Lake Mead elevations will be at or below 1,030 feet anytime within the succeeding two Years, the Secretary and Lower Division States shall consult and determine what additional measures will be taken by the Secretary and Lower Division States to avoid and protect against the potential for Lake Mead to decline below 1,020 feet.

C. Term

These LBOps will remain in effect from the Effective Date through the Interim Period except for those matters for which longer periods are specified.

After the Interim Period the provisions for the accounting and delivery of DCP ICS shall remain in effect through December 31, 2057, as set forth in Section III.E.2.d, III.F.2 and III.F.4 above.

The provisions for the delivery of ICS set forth in Section IV.D above shall remain in effect through December 31, 2036, for any ICS remaining in an ICS Account on December 31, 2026.

The period during which Tributary Conservation ICS, Imported ICS, or Developed Shortage Supply may be created and delivered are unchanged from the 2007 Interim Guidelines.

Appendix 1 to the Lower Basin Drought Contingency Operations (LBOps)

Table of Extraordinary Conservation (EC) ICS available as of the Effective Date, in accordance with Section IV.A.1 of the LBOps.

Values are in Acre-Feet

State/Contractor	Amount of EC ICS Available As Of the Effective Date [1]	Assessment Applied Pursuant to Section IV.A.1 of the LBOps [2]	Amount of EC ICS Available On the Effective Date, After Assessment
Arizona			
Central Arizona Water Conservation District [3]	171,590	-	171,590
California			
The Metropolitan Water District of Southern California [4]	387,136	(7,548)	379,588
Nevada			
Southern Nevada Water Authority [5]	173,093	(1,217)	171,876

Footnotes:

[1]This column reflects ICS created through calendar year 2017, with system and evaporation assessments, consistent with the 2007 Interim Guidelines, applied through calendar year 2018.

[2]Additional system losses assessed by the Secretary to ensure that total assessed losses for all ICS set forth in Appendix 1 is at least 10%.

[3]EC ICS credited to CAWCD includes the conservation referenced in Footnote 8 of Table 11 in the 2015 Water Accounting Report and Footnote 7 of Table 11 in the 2016 Water Accounting Report.

[4]EC ICS credited to MWD includes the conservation referenced in Footnote 8 of Table 11 of the 2017 Water Accounting Report.

[5]EC ICS credited to SNWA includes the conservation referenced in Footnote 10 of Table 11 of the 2017 Water Accounting Report.

EC ICS Creation 2015 through 2017

In addition to the conservation created through the ICS Exhibits approved with the 2007 ICS Agreement, ICS was created in 2015, 2016 and 2017 in accordance with the following ICS Exhibits:

LBOps ICS Exhibit Q - Central Arizona Water Conservation District – Funded Intentionally Created Surplus Water Supply from Conserved Water

LBOps ICS Exhibit W - Southern Nevada Water Authority – Extraordinary Conservation Intentionally Created Surplus using Municipal Conservation and Offstream Storage for Implementation under the Lower Basin Drought Contingency Plan

EC ICS Creation in 2018

In addition to the conservation created through the ICS Exhibits approved with the 2007 ICS Agreement, ICS will be created in 2018 in accordance with the following ICS Exhibits:

LBOps ICS Exhibit R - Central Arizona Water Conservation District - Demand Reduction Incentives to Create Extraordinary Conservation Intentionally Created Surplus

LBOps ICS Exhibit W - Extraordinary Conservation Intentionally Created Surplus using Municipal Conservation and Offstream Storage for Implementation under the Lower Basin Drought Contingency Plan

EC ICS Creation From 2019 Through Term of LBOps

In addition to the conservation created through the ICS Exhibits approved with the 2007 ICS Agreement, additional ICS Exhibits will be used to create EC ICS from 2019 through the term of the LBOps pursuant to Section IV.E.2 of the LBOps and the 2007 Interim Guidelines.

FRAMEWORK AGREEMENT
AMONG
THE UNITED STATES, THE STATE OF ARIZONA AND THE CENTRAL ARIZONA WATER CONSERVATION DISTRICT
FOR AN ARIZONA ICS PROGRAM

RECITALS

A. On December 13, 2007, the Secretary of the Interior (Secretary) executed a Record of Decision that included Interim Guidelines for Lower Basin Shortages and Coordinated Operations of Lake Powell and Lake Mead (2007 Guidelines). These 2007 Guidelines include a mechanism to encourage and account for augmentation and conservation of water supplies, referred to as intentionally created surplus (ICS). The 2007 Guidelines outline four categories of ICS, one being Extraordinary Conservation ICS. The opportunity to create ICS is provided to an entity holding an entitlement to mainstream water under: the Consolidated Decree; a water delivery contract with the United States through the Secretary; or a reservation of water by the Secretary.

B. The primary purposes of ICS are to: (a) encourage the efficient use and management of Colorado River water; (b) increase the surface elevations of both Lake Mead and Lake Powell to higher levels than would have otherwise occurred; (c) help minimize or avoid shortage to water users in the Lower Basin; and (d) assure any Contractor that invests in conservation or augmentation to create ICS that no other Contractor will claim the ICS.

C. The 2007 Guidelines limit the annual amount of Extraordinary Conservation ICS that may be created by Arizona Contractors to 100,000 acre-feet during any Year. The 2007 Guidelines limit the total amount of Extraordinary Conservation ICS that can be delivered to Arizona in a Year to 300,000 acre-feet. Under the 2007 Guidelines, the maximum amount of Extraordinary Conservation ICS that may be accumulated by all Arizona Contractors at any time is limited to 300,000 acre-feet.

D. Recognizing the need to develop and test, on an interim basis, additional operational tools to address and reduce the likelihood of the continued decline of the elevation of Lake Mead, certain parties in the Lower Basin and the Secretary developed the Lower Basin Drought Contingency Operations Plan (LBOps). Through Pub. L. No. 116-14 and the Lower Basin Drought Contingency Plan Agreement (LBDCP Agreement), the parties thereto agreed to the implementation of the LBOps.

E. The LBOps increase the maximum total amount of Extraordinary Conservation ICS, Binational ICS and DCP ICS that may be accumulated by all Arizona Contractors to 500,000 acre-feet and provides that additional ICS accumulation space may be made available from one or more Lower Division States pursuant to separate written agreements.

F. The Lower Division States have entered into one such separate agreement, the DCP Contributions and ICS Accumulation Limits Sharing Agreement (Sharing Agreement), which provides that the States of California and Nevada shall make up to an additional 50,000 acre-feet each of their respective ICS accumulation space (100,000 acre-feet total) available to Arizona for use by Arizona Contractors under certain terms set forth in the Sharing Agreement. The creation and delivery limits remain the same as in the 2007 Guidelines.

G. The United States of America, represented by the Secretary of the Interior, acting through the Regional Director of the Lower Colorado Region for the Bureau of Reclamation, the State of Arizona, acting through the Director of the Arizona Department of Water Resources (ADWR), and the Central Arizona Water Conservation District (CAWCD) (collectively, the Parties) desire to develop a program for creation, accumulation and delivery of ICS by Arizona ICS Creators, as defined in Section 2(b) of this Framework Agreement, regardless of the effectiveness of the LBOps.

H. The Parties desire to establish a program for creation, accumulation and delivery of ICS by Arizona ICS Creators, pursuant to the 2007 Guidelines, the LBOps, and on the terms and conditions set forth in this Framework Agreement.

NOW THEREFORE, the Parties hereby agree as follows:

AGREEMENT

1. Term

This Framework Agreement shall become effective upon the execution of both: 1) this Framework Agreement by all Parties, and 2) the Agreement Concerning Colorado River Drought Contingency Management and Operations and the LBDCP Agreement by all parties to those agreements. The provisions regarding the creation of ICS shall terminate on December 31, 2026. The remaining provisions shall terminate on the later of (a) December 31, 2026, or (b) the date on which all Arizona ICS Accounts and Arizona DCP ICS Accounts created pursuant to the 2007 Guidelines or this Framework Agreement are reduced to zero.

2. Definitions

Terms defined in Section XI.F of the 2007 Guidelines or in the LBOps shall have the same meaning when used in this Framework Agreement. Additionally, for purposes of this Framework Agreement:

a. 2007 ICS Agreement shall mean the Lower Basin Intentionally Created Surplus Forbearance Agreement, executed on December 13, 2007, as amended and supplemented.

b. Arizona ICS Creators shall mean: all CAP Settlement Tribes with an approved ICS Exhibit to the LBOps or an approved Exhibit to the 2007 ICS Agreement; CAWCD, which has approved ICS Exhibits to the LBOps and approved Exhibits to the 2007 ICS Agreement; all On-River Contractors with an approved ICS Exhibit to the LBOps or an approved Exhibit to the 2007 ICS Agreement; and all On-River Tribes with an approved Exhibit to the 2007 ICS Agreement.

c. Arizona ICS Program shall mean the program for the creation, accumulation and delivery of ICS by Arizona ICS Creators established by this Framework Agreement.

d. CAP Settlement Tribe shall mean a Tribe located within Arizona with a Congressionally approved water settlement agreement, and a water delivery contract with the United States.

e. Consumptive Use shall have the same meaning as that provided in the Consolidated Decree.

f. On-River Contractor shall mean a non-Tribal entity, other than CAWCD, with an entitlement to Mainstream water for use within Arizona pursuant to the Consolidated Decree or a water delivery contract with the United States through the Secretary.

g. On-River Tribe shall mean an Arizona Tribe with an entitlement to Mainstream water under the Consolidated Decree or pursuant to a water delivery contract with the United States through the Secretary.

3. Lake Mead Elevations

Unless otherwise specified, references to specific elevations in Lake Mead are to the projections in the United States Bureau of Reclamation's August 24-Month Study for the most probable inflows.

4. Authority to Create, Accumulate, and Receive Delivery of Extraordinary Conservation ICS

CAWCD, On-River Contractors, and On-River Tribes qualify as a Contractors for purposes of creating, accumulating and receiving delivery of ICS in accordance with the 2007 Guidelines.

Although the Parties may have differences of opinion on certain issues, the Parties agree, for purposes of this Framework Agreement, that CAP Settlement Tribes may create, accumulate, and receive delivery of ICS in accordance with the 2007 Guidelines and the LBOps.

5. New Arizona Exhibits to the 2007 ICS Agreement

a. Requirements for New Exhibits

Each proposal for a New Arizona Exhibit shall contain at a minimum:

i. The name of Contractor or CAP Settlement Tribe that would create the Extraordinary Conservation ICS;

ii. A description of the proposed extraordinary conservation project and how the project will reduce historic Consumptive Use;

iii. The term of the exhibit, if different from the Interim Period;

iv. The maximum annual volume of Extraordinary Conservation that could be created by the project; and

v. The proposed method of verification.

b. Development of Proposals for New Exhibits

i. Any On-River Contractor, or the United States in coordination with a CAP Settlement Tribe or On-River Tribe shall confer with ADWR and CAWCD regarding the development of a new exhibit.

ii. CAWCD shall consult with ADWR regarding the development of a new exhibit by CAWCD.

c. Submission of Proposals for New Exhibits

i. CAWCD may propose a new exhibit to the 2007 ICS Agreement to the non-Arizona parties to that agreement jointly with ADWR pursuant to the provisions of this Section 5.

ii. An On-River Contractor may propose a new exhibit to the 2007 ICS Agreement to the non-Arizona parties to that agreement jointly with ADWR pursuant to the provisions of this Section 5.

iii. An On-River Tribe, in coordination with the United States, may propose a new exhibit to the 2007 ICS Agreement to the non-Arizona parties to that agreement jointly with ADWR pursuant to the provisions of this Section 5.

iv. A CAP Settlement Tribe, in coordination with the United States, may propose a new exhibit, developed pursuant to Section 5.b.i above to the 2007 ICS Agreement to the non-Arizona parties to that agreement jointly with ADWR pursuant to the provisions of this Section 5.

6. Cooperative Use of Arizona's Annual Extraordinary Conservation ICS Creation Limit and Sharing

a. In each Year when Lake Mead's January 1 elevation is projected to be above 1,025 feet, CAWCD and On-River Contractors may create a combined total of up to 50,000 acre-feet of Extraordinary Conservation ICS in Lake Mead.

b. In each Year when Lake Mead's January 1 elevation is projected to be above 1,025 feet, On-River Tribes and CAP Settlement Tribes may create a combined total of up to 50,000 acre-feet of Extraordinary Conservation ICS in Lake Mead.

c. If any 24-Month Study for the minimum probable inflows projects that Lake Mead elevations will be at or below 1,030 feet within the succeeding two Years, the Parties and Arizona ICS Creators shall consult regarding the advisability of creating Extraordinary Conservation ICS when Lake Mead elevations are at or below 1,025 feet.

d. If CAWCD and On-River Contractors participating in the Arizona ICS Program desire to create amounts of Extraordinary Conservation ICS in excess of the annual Extraordinary Conservation ICS creation limit as set forth in Section 6.a, CAWCD and ADWR shall so inform the United States, by June 15 of the year prior to the year of creation. If any additional annual creation capacity is available, such unused annual creation capacity shall be made available to CAWCD and On-River Contractors participating in the Arizona ICS Program.

e. If the Arizona On-River Tribes and CAP Settlement Tribes participating in the Arizona ICS Program desire to create amounts of Extraordinary Conservation ICS in excess of the annual Extraordinary Conservation ICS limit, as set forth in Section 6.b, the United States shall so inform CAWCD and ADWR by June 15 of the year prior to the year of creation. If any additional annual creation capacity is available, such unused annual creation capacity shall be made available to the On-River Tribes and CAP Settlement Tribes participating in the Arizona ICS Program.

f. In any Year when the annual Extraordinary Conservation creation limits set forth in Sections 6.a and 6.b of this Framework Agreement are reached, there remains a desire to create additional amounts of

Extraordinary Conservation ICS, and the Secretary authorizes additional Extraordinary Conservation ICS creation for Arizona pursuant to Section IV.B of the LBOps, the Parties and Arizona ICS Creators shall meet and confer on how such additional Extraordinary Conservation ICS creation capacity is to be shared among Arizona ICS Creators.

g. Nothing in this Section 6 shall be construed as limiting any Arizona ICS Creator's ability to create Binational ICS or System Efficiency ICS.

7. Cooperative Use of Arizona's Total ICS Accumulation Limit and Sharing

a. Pursuant to the LBOps, the maximum total amount of Extraordinary Conservation ICS, Binational ICS and DCP ICS that may be accumulated in Arizona's ICS Account, at any time, is limited to 500,000 acre-feet, with the possibility of additional accumulation space being made available by other Lower Division States, including 100,000 acre-feet under the terms set forth in the Accumulation Limits Sharing Agreement. The Parties agree that Arizona's total accumulation limit is allocated as follows:

i. 250,000 acre-feet for CAWCD and On-River Contractors.

ii. 250,000 acre-feet for On-River Tribes and CAP Settlement Tribes.

iii. If Arizona's ICS Account contains 500,000 acre-feet and Arizona ICS Creators desire to create additional ICS pursuant to the Accumulation Limits Sharing Agreement, the amount of additional ICS capacity shall be shared equally between CAWCD and On-River Contractors on the one hand, and On-River Tribes and CAP Settlement Tribes on the other hand.

b. Notwithstanding the foregoing, CAWCD and On-River Contractors are permitted to occupy the accumulation space ascribed to On-River Tribes and CAP Settlement Tribes in Section 7.a.ii of this Framework Agreement, provided that, in any Year when On-River Tribes and CAP Settlement Tribes plan to create Extraordinary ICS, and there is insufficient Section 7.a.ii accumulation space available, CAWCD and On-River Contractors shall evacuate the amount of Section 7.a.ii accumulation space they occupy necessary to accommodate the creation plans of the On-River Tribes and CAP Settlement Tribes in that Year through the water delivery scheduling process, subject to the following:

i. Except for ICS created in 2019, the United States shall provide written notice to ADWR and CAWCD regarding the intention of one or more On-River Tribes and CAP Settlement Tribes participating in the Arizona ICS Program to use the space occupied by CAWCD and On-River Contractors no later than March 1 of the year in which an On-River Tribe or CAP Settlement Tribe will submit a creation plan to the United States indicating it will occupy such space in the following year (Notice).

ii. Any Notice shall indicate the amount of Section 7.a.ii accumulation space occupied by CAWCD and On-River Contractors that is needed to accommodate the creation or conversion plans of On-River Tribes and CAP Settlement Tribes.

iii. CAWCD and On-River Contractors shall not convert ICS that is occupying the accumulation space ascribed to On-River Tribes and CAP Settlement Tribes in Section

7.a.ii of this Framework Agreement to DCP ICS, without the consent of all On River Tribes and CAP Settlement Tribes that are also Arizona ICS Creators.

c. Notwithstanding the foregoing, On-River Tribes and CAP Settlement Tribes are permitted to occupy the accumulation space ascribed to CAWCD and On-River Contractors in Section 7.a.i of this Framework Agreement, provided that, in any Year when CAWCD and On-River Contractors plan to create Extraordinary ICS, and there is insufficient Section 7.a.i accumulation space available, On-River Tribes and CAP Settlement Tribes shall evacuate the amount of Section 7.a.i accumulation space they occupy necessary to accommodate the creation or conversion plans of the CAWCD and On-River Contractors in that Year, subject to the following:

i. CAWCD and On-River Contractors shall provide written notice to ADWR and the United States regarding the intention of CAWCD or On-River Contractors participating in the Arizona ICS Program to use the space occupied by On-River Tribes and CAP Settlement Tribes no later than March 1 of the year in which CAWCD or an On-River Contractor will submit a creation plan to the United States indicating it will occupy such space in the following year (Notice);

ii. Any Notice shall indicate the amount of Section 7.a.i accumulation space occupied by On-River Tribes and CAP Settlement Tribes that is needed to accommodate the creation or conversion plans of CAWCD and On-River Contractors.

iii. On-River Tribes and CAP Settlement Tribes shall not convert ICS that is occupying the accumulation space ascribed to CAWCD and On-River Contractors in Section 7.a.i of this Framework Agreement to DCP ICS, without the consent of CAWCD and On-River Contractors that are also Arizona ICS Creators.

8. Cooperative Use of Arizona's Annual ICS Delivery Limit and Sharing

a. Pursuant to the LBOps, in Years when Lake Mead's January 1 elevation is projected to be above elevation 1,045 feet and at or below elevation 1,075 feet, the combined total delivery of Extraordinary Conservation ICS, Binational ICS, System Efficiency ICS and DCP ICS in Arizona shall be limited to 300,000 acre-feet. The Parties agree that this annual delivery limit shall be cooperatively used as follows:

i. 150,000 acre-feet for CAWCD and On-River Contractors; and

ii. 150,000 acre-feet for On-River Tribes and CAP Settlement Tribes.

b. Pursuant to the LBOps, in Years when Lake Mead's January 1 elevation is projected to be above elevation 1,025 feet and at or below elevation 1,045 feet, the combined total delivery of Extraordinary Conservation ICS, Binational ICS, System Efficiency ICS, DCP ICS and the conversion of ICS to DCP ICS in Arizona shall be limited to 300,000 acre-feet. The Parties agree that this annual delivery limit shall be cooperatively used as follows:

i. 150,000 acre-feet for CAWCD and On-River Contractors; and

ii. 150,000 acre-feet for On-River Tribes and CAP Settlement Tribes.

c. Pursuant to the LBOps, in Years when Lake Mead's January 1 elevation is projected to be below 1,025 feet, delivery of Extraordinary Conservation ICS, Binational ICS, System Efficiency ICS and DCP ICS shall not be permitted.

d. Prior to submitting orders for delivery of ICS, the Parties and Arizona ICS Creators shall meet and confer to consider the impacts of ICS delivery and/or conversion of ICS to DCP ICS on Lake Mead elevations. This may be done in conjunction with the annual coordination pursuant to Section 15 (Coordination) of this Framework Agreement.

e. If it is determined during the annual coordination meeting pursuant to Section 15, that CAWCD and On-River Contractors participating in the Arizona ICS Program will reach the annual ICS delivery limits in the upcoming year, as set forth in Section 8.a.i or 8.b.i, and if there remains a desire to deliver and/or convert additional amounts of ICS, ADWR and CAWCD shall consult with the United States, prior to August 1 of the year prior to the year of delivery. After coordinating with the On-River Tribes and CAP Settlement Tribes participating in the Arizona ICS Program, the United States will advise ADWR and CAWCD by September 1, of the year prior to the year of delivery, if any additional annual delivery capacity is available, and may make such unused annual delivery capacity available to CAWCD and On-River Contractors.

f. If it is determined during the annual coordination meeting pursuant to Section 15, that On-River Tribes and CAP Settlement Tribes participating in the Arizona ICS Program will reach the annual ICS delivery limits in the upcoming year, as set forth in Section 8.a.ii or 8.b.ii, and if there remains a desire to deliver and/or convert additional amounts of ICS, the United States shall consult with ADWR and CAWCD, prior to August 1 of the year prior to the year of delivery. ADWR and CAWCD will advise the United States by September 1, of the year prior to the year of delivery, if any additional annual delivery capacity is available, and may make such unused annual delivery capacity available to On-River Tribes and CAP Settlement Tribes.

9. Coordination with On-River Contractors

Beginning no later than June 15, 2019, ADWR and CAWCD shall host one or more meetings with On-River Contractors with an interest in creating ICS to develop standards to facilitate On-River Contractors' participation in the Arizona ICS Program, including but not limited to standards for the sharing of ICS creation, accumulation, delivery limits and conversion of ICS to DCP ICS between On-River Contractors and CAWCD.

10. Determination of On-River Tribes and CAP Settlement Tribes' Annual Creation Limit, Delivery Limit and Total Accumulation Limit

The United States will consult with CAP Settlement Tribes and On-River Tribes participating in the Arizona ICS Program to determine how to share the annual Extraordinary Conservation ICS creation limit, the annual ICS delivery/conversion limit and the total ICS accumulation limit allocated to On-River Tribes and CAP Settlement Tribes in Sections 6, 7, and 8 of this Framework Agreement. Each CAP Settlement Tribe desiring to participate in the Arizona ICS Program will enter into an ICS Delivery Agreement with the United States, as provided in Section 12 of this Framework Agreement. Each On-River Tribe desiring to participate in the Arizona ICS Program will enter into a Delivery Agreement with the United States, as provided in Section 13 of this Framework Agreement.

11. CAWCD Forbearance

Although the Parties may have differences of opinion on certain issues, in order to provide greater certainty in the implementation of the Arizona ICS Program, CAWCD hereby forbears any right it may have to delivery of any ICS created by or delivered to any other Arizona ICS Creator, provided that such ICS is created and delivered in accordance with:

a. This Framework Agreement;

b. Any applicable ICS Delivery Agreement; and

c. The 2007 ICS Agreement and the LBOps.

12. Delivery of Extraordinary Conservation ICS to CAP Settlement Tribes

Delivery of ICS to a CAP Settlement Tribe shall be pursuant to (1) a Delivery Agreement between the Tribe and the United States; (2) a wheeling contract or federal arrangement between the Tribe and the United States pursuant to the CAP System Use Agreement; and (3) applicable provisions of the Tribe's delivery contract with the United States, Section 3.C of the 2007 Interim Guidelines, Sections III.D, III.F and IV.D of the LBOps, the 2007 ICS Agreement, and CAWCD's Delivery Agreement. Extraordinary Conservation ICS created by a CAP Settlement Tribe shall be delivered to the CAP Settlement Tribe that created it pursuant to the applicable settlement.

a. The United States will consult with ADWR and CAWCD before entering into a Delivery Agreement with a CAP Settlement Tribe.

b. In consideration of the mutual agreements set forth in this Framework Agreement, the Parties have agreed that EC ICS delivered to CAP Settlement Tribes will be transported through the CAP System and delivered pursuant to a Reclamation Wheeling Contract or federal arrangement, consistent with and pursuant to, the CAP System Use Agreement.

13. Delivery of Extraordinary Conservation ICS to On-River Tribes and On-River Contractors

a. Extraordinary Conservation ICS created by an On-River Tribe or an On-River Contractor shall be delivered pursuant to a Delivery Agreement between the appropriate On-River Tribe and/or On-River Contractor and the United States. Extraordinary Conservation ICS shall be delivered to the Arizona On-River Tribe or On-River Contractor that created it.

b. The United States shall consult with ADWR and CAWCD before entering into a Delivery Agreement with an On-River Tribe or an On-River Contractor.

14. CAP Cost Recovery

a. Unless CAWCD, the United States and the CAP Settlement Tribe agree otherwise, CAP Settlement Tribes will be required to pay to CAWCD the CAP Fixed OM&R Charge on the volume of water conserved to create ICS in the year in which the ICS is created.

b. CAP Settlement Tribes will be required to pay to CAWCD the CAP Pumping Energy Charge for EC ICS delivered to, or on behalf of, a CAP Settlement Tribe in the year in which the EC ICS is delivered.

15. Coordination

On or before March 1 of each year during the term of this Framework Agreement, the United States, CAWCD, ADWR and any On-River Tribe, CAP Settlement Tribe or On-River Contractor participating in the creation, accumulation and delivery of ICS pursuant to this Framework Agreement, shall meet and coordinate on planned ICS creation, accumulation and delivery for the upcoming year.

Additionally, when the United States is notified during any year that an On-River Tribe or a CAP Settlement Tribe intends to participate in the Arizona ICS Program, the United States and the Tribe shall meet and confer with ADWR and CAWCD on proposed ICS exhibits and creation plans.

16. Reservation of Rights

The Parties acknowledge that they have differing opinions on legal issues that are the subject of this Framework Agreement. Notwithstanding the terms of this Framework Agreement, each of the Parties expressly reserves, and shall not be deemed to have waived, any and all rights they may have as of the date hereof or as may accrue after the term hereof, under the Consolidated Decree, any federal or state law or administrative rule, regulation, guideline, or any contract. Nothing in this Framework Agreement is intended to contravene, delegate, or diminish the Parties' respective rights under the Consolidated Decree, any federal or state law or administrative rule, regulation, guideline, or any contract.

17. Amendment, Modification, and/or Supplement:

This Framework Agreement may be amended, modified, or supplemented only by the written agreement of the Parties. The Parties shall not amend, modify, or supplement this Framework Agreement unless it has provided at least sixty (60) days written notice to all Arizona ICS Creators. No amendment modification, or supplement shall be binding unless it is in writing and signed by all Parties.

18. Notices

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

If to the United States:

Bureau of Reclamation,
Lower Colorado Region
c/o Regional Director
P.O. Box 61470
Boulder City, NV 89006-1470

With a copy to:

Bureau of Reclamation
Phoenix Area Office
c/o Area Manager
6150 West Thunderbird Road
Glendale, AZ 85306

If to ADWR:

Arizona Department of Water Resources
Attn: Director
P.O. Box 36020
Phoenix, Arizona 85067-6020

If to CAWCD:

Central Arizona Water Conservation District
c/o General Manager
P.O. Box 43020
Phoenix, Arizona 85080-3020

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

19. Governing Law.

This Framework Agreement shall be interpreted, governed by, and construed under applicable Federal law and any relevant provisions of Arizona state law. In case of conflict between Federal law and Arizona state law, Federal law controls. To the extent permissible under the Federal Rules of Civil Procedure and other applicable Federal authority, venue for adjudication of any disputes under this Framework Agreement shall be in an appropriate Federal court.

20. Judicial Remedies Not Foreclosed

Nothing in this Framework 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.

21. Equal Opportunity/Nondiscrimination

The Parties agree to comply with all applicable federal or Arizona laws relating to equal opportunity and non-discrimination.

22. Officials Not to Benefit

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

23. Cancellation of Contract

This Framework Agreement is subject to cancellation by the State of Arizona under A.R.S. § 38-511.

24. 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 contract shall be contingent upon appropriation or allotment of funds. No liability shall accrue to the United States in case funds are not appropriated or allotted.

UNITED STATES OF AMERICA

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

Date: 5/20/2019, 2019

ARIZONA DEPARTMENT OF WATER RESOURCES

By: _____
Thomas Buschatzke
Director

Approved as to form:

_____
Nicole D. Klobas
Deputy Chief Counsel

CENTRAL ARIZONA WATER CONSERVATION DISTRICT

By: _____
Lisa Atkins
President

Date: 20 May, 2019

Attest:

_____
Sharon Megdal
Secretary

Date: May 20, 2019

Approved as to form:

_____
Jay Johnson
General Counsel

Date: 5-20, 2019