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Enduring Solutions on the Colorado River Part II

Floating Pools and Grand Bargains

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"For an entire region of America, this great river, therefore, is the lifeline of survival, the lifeline of growth, of prosperity and of hope." Lyndon B. Johnson

Conserving water now in reservoir savings banks, as a hedge against future risks associated with drought and declining flows, has emerged as one of the central tools for managing the Colorado River. The Lower Basin "Intentionally Created Surplus" program, created in the 2007 Interim Guidelines, has shown the idea's promise and given the basin nearly two decades to learn the strengths and weaknesses of the approach. With tweaks to allow similar efforts in the Upper Basin and other modifications based on what we have learned about the current ICS approach, such

"Floating Pools" are one of the key tools being considered as negotiators try to thread the needle of a seven-state agreement for post-2026 Colorado River management.

Done properly, they have the potential to finesse the states' disagreement over the terms of the 1922 Colorado River Compact in a way that could avoid potentially disruptive litigation. But getting the details right will be crucial to the development of an enduring bargain that can help the basin avoid the risk of interstate litigation.

Context

Negotiations over post-2026 operating rules for Lakes Powell and Mead are a proxy battle over whether the 1922 Compact acts as a limitation on yet-to-be used water in the Upper Division States or as a cut to existing water uses in the Lower Division States. Much of the conflict focuses on Article III(d) of the Colorado Compact, which states, "The states of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years. . ."[1]

The Upper Division States have a fundamentally different interpretation of their Compact obligations at Lee Ferry than the Lower Division States. Clearly, the best-case scenario for the Lower Division States, especially in Central Arizona, is a court decision that confirms the Upper Division States have a compact obligation to not deplete the flow of the river below 75 million acre-feet every ten years *plus* ½ of the annual delivery to Mexico under the 1944 Treaty, approximately 82 million acre-feet every ten years. This outcome would mostly stabilize the water supply available to the Lower Division States and likely limit consumptive uses in the Upper Division States to about the same or a little less water than they are currently using, approximately 4 million acre-feet per year.[2] If the high court rules instead that the Upper Division States have a non-depletion

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[1] Article III(d), Colorado River Compact (November 24, 1922).

[2] Since 2000, the estimated annual natural flow at Lee Ferry (the compact point) from the USBR natural flow database data is ~ 12.4 maf/year. Over the same period, consumptive uses in the Upper Basin (which includes a small portion of Arizona) have averaged about 4.3 maf/year, including CRSP evaporation. On a steady-state basis, this leaves about 8.1 maf/year for delivery to the Lower Basin. Thus, the river system is approximately in balance, perhaps the Upper Division States would have a small deficit. The river unfortunately, does not operate on a steady-state basis. There is considerable science pointing to continuing climate change driven aridification in the Colorado River Basin. In the future, annual natural flows could continue to decline. And, depending on hydrology, potentially even cuts to existing, post-compact uses. Under Article VIII of the 1922 Compact, perfected rights that were in place at the time the compact became effective are "unimpaired" by the compact. In the Upper Basin, these are commonly referred to as "pre-compact" rights. There are numerous unresolved legal issues related to the Upper Basin's pre-compact rights. A simple assumption is that about two million acre-feet per year of Upper Basin consumption is associated with these pre-compact rights. Thus, under very dry, but plausible hydrology, under the Lower Division State's view of the compact, Upper Basin uses could be curtailed down to a point where only pre-compact rights are allowed to divert.

obligation, and that consumptive uses in the Upper Division States are not the "cause" of inadequate flows needed to deliver 8.23 million acre-feet to the Lower Division States and Mexico, the result in a declining river system is a cut, potentially even to zero, for water delivered via the Central Arizona Project (CAP) into the Sun Corridor from Phoenix to Tucson and potential cuts to water-right holders in Western Arizona, Southern California and Nevada who are next on the chopping block.[3]

Distilled to its core, here is the question before us: in a declining river system and in the absence of an agreement among the Divisions, does the operation of Article III(d) of the Compact result in a limitation on future new uses in the Upper Division States or an elimination to existing ones in the Lower Division States?

Absent Compact litigation or a "grand" bargain, in a declining Colorado River system, Central Arizona faces *near certainty* that its water uses will be cut significantly on a near-permanent basis and will be cut even more (potentially even to zero) a significant amount of the time. Water users in Western Arizona and Southern California with priorities less senior than present-perfected rights are at risk of cuts as well. Therefore, the status quo is not a fallback option for the Lower Division States, and particularly not for Central Arizona; it must either litigate the Compact or negotiate a bargain with the Upper Division States that provides benefits large enough to forego litigation.

Many assume that any bargain is better than engaging in litigation, but this isn't necessarily true. Central Arizona must weigh the certainty of a (relatively) small amount of water brought through a bargain versus the possibility of a big payout that arrives via litigation. And if litigation is the answer, either by intent or for lack of a bargain, the Lower Division States are probably better off litigating immediately rather than giving the Upper Division States time to develop new water uses.

Colorado River negotiations over post-2026 operations involve many goals for each respective basin-state principal, but two likely most important are: 1) secure as much water as possible for your state over the long term; and 2) avoid an outcome where opposing states feel litigation is the better option. The first goal is not selfish or avaricious; negotiators must sell the deal back home to stakeholders, all of whom have valid and important uses for the water. The second will involve painful tradeoffs and is at some level contradictory to the first.

One possible concept for a "grand" bargain between the Upper Division States and Lower Division States might include the Upper Division States' development of a

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[3] For example, Metropolitan Water District of Southern California, San Diego, Wellton-Mohawk Irrigation & Drainage District, Yuma Mesa Division of Gila Project, etc. There are, of course, many potential outcomes of litigation that might result in a "mixed" decision. For example, the court could find that the Upper Division States have an affirmative obligation to not deplete the ten-year flow below 75 maf every ten-years, but their obligation to provide water to Mexico only applies under certain limited conditions. Such a decision might have a big impact on the CAP, but a smaller impact on California projects.

Floating Pool (a segregated pool of water that floats on top of the "system" water and is "assigned" for use to a specific beneficiary) in Lake Powell filled with water that can be delivered to the Lower Division States for sharing of reductions deeper than 1,500,000 acre-feet, and in return the Lower Division States' commitment to forego litigation of the Upper Division States' 1922 Compact obligations for the duration of the post-2026 operational criteria for Lakes Powell and Mead.[4]

The basic question facing the governors, board members, and, in Arizona, state legislators who must ultimately approve any agreement is the following: "is my state better off under a negotiated agreement or litigation?"

Answering this question will require a careful evaluation of the risks and rewards of both the proposed bargain and the litigation alternative. The answer may be different in the individual states and between different priorities of water within each state. Because of the junior status of the water delivered through the CAP, the lynchpin state will almost certainly be Arizona, though notably, Southern California's rights are certainly also at risk.

It is with this second goal in mind that this paper is written. It is a follow-up to the paper *Enduring Solutions on the Colorado River*[5] that detailed the important flexibilities inherent in, but also the dangers of Assigned Water in Lakes Powell and Mead and is offered with the hope of avoiding litigation outcomes by explaining first how unrestricted Floating Pools of Assigned Water in Lake Powell can push the Lower Division States and particularly Central Arizona into litigation and second the boundaries and conditions on these pools that may create the foundation for a shared agreement.

Floating Pools

Currently, Assigned Water is water that can be delivered independent of the priority system and that is held in the reservoir by the Secretary of the Interior for the benefit of a specific entity. Assigned Water also includes delayed water deliveries held for the benefit of the Republic of Mexico that can be delivered subsequently in amounts more than the U.S. treaty obligation to Mexico of 1,500,000 acre-feet of water each year.[6] The

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[4] Neither the Lower nor Upper Division States publicly put forward a proposal containing the concepts discussed here.

[5] *Enduring Solutions on the Colorado River* (August 16, 2024) https://morrisoninstitute.asu.edu/sites/default/files/2024-08/Enduring%20Solutions%20on%20the%20Colorado%20River2.pdf.

[6] Record of Decision Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead December 2007. Treaty minutes allow Mexico to store water, See Minute 319 (Interim International Cooperative Measures in the Colorado River Basin Through 2017 and Extensions of Minute 318 Cooperative Measures to Address the Continued Effects of the April, 2010 Earthquake in the Mexicali Valley, Baja California, November 20, 2012); and Minute 323 (Extension of Cooperative Measures and Adoption of a Binational Water Scarcity Contingency Plan in the Colorado River Basin, September 21, 2017).

existence of Assigned Water in Lake Mead held for entities within the Lower Division States relies on creative interpretation of the Secretary's authority to allocate surplus water in the Lower Division States, which is why it is referred to as Intentional Created Surplus or ICS. As yet, there is no post- 2026 legal mechanism for development or storage of Assigned Water in either Lakes Mead or Powell.

• Assigned Water creates critically important operational flexibility; it allows its owner to either forgo water deliveries in one year—or pay someone else to—and deliver the water during another potentially desperate time. This flexibility has great value and is the reason the Upper Division States are interested in developing Assigned Water in Lake Powell; a pool of previously created Assigned Water could be delivered to the Lower Division States during times of deep shortages in a manner that obviates the need for the Lower Division States to make a compact call. In other words, the Upper Division States could fulfill their obligations at a time and manner of their choosing, rather than under duress.

• Assigned Water is generally insulated from shortage, forfeiture and abandonment.

• Under current rules, Assigned Water "counts" operationally in the determination of shortage, but not surplus. Thus, it is not operationally neutral and potentially protects lower-priority water right holders to the detriment of higher-priority water right holders. This flaw in design is known and discussions over future deployment of Assigned Water include provisions for operational neutrality. Future Assigned Water would theoretically "float" above existing reservoir contents, thus the term "Floating Pools."

• Assigned Water does not solve the problem of overallocation; rather, it shifts water deliveries in time and changes who owns the water. It is a means to take water that would have otherwise been used in priority out of the priority system and earmark it for delivery at a later date and potentially to a different user.

Operation of the Priority System

In the Upper Division States, consumptive uses have remained below their 7.5 million acre-feet per year Compact apportionment. Thus, water for which there is no demand makes its way to Lake Powell. Once in Lake Powell, water is released according to relevant operating rules (the Long-Range Operating Criteria until 2006 and the 2007 Interim Guidelines through 2026). These releases reach Lake Mead and are then subject to the allocation rules that govern in the Lower Division States; generally, the prior appropriation rules and since 2007, the complicated system of Assigned Water management detailed in *Enduring Solutions*. Importantly for the points being made here, under the 1968 Colorado River Basin Project Act, during shortage in the Lower Division States, water delivered through the CAP is curtailed before higher priority rights in Arizona, California and Nevada are cut:

"…in any year in which, as determined by the Secretary, there is insufficient main stream Colorado River water available for release to satisfy annual consumptive use of seven million five hundred thousand acre-feet in Arizona, California, and Nevada, diversions from the main stream for the Central Arizona Project shall be so limited as to assure the availability of water in quantities sufficient to provide for the aggregate annual consumptive use by holders of present perfected rights, by other users in the State of California served under existing contracts with the United States by diversion works heretofore constructed, and by other existing Federal reservations in that State, of four million four hundred thousand acre-feet of mainstream water, and by users of the same character in Arizona and Nevada."[7]

Thus, it is often said that "CAP water" is lowest in priority in the Lower Division States.[8] Acceptance of this clause was the price Arizona was forced to pay California to gain passage of the Act and funding for construction of the CAP.[9]

Fundamentally this means that anytime there is insufficient Colorado River water to meet 7.5 million acre-feet[10] of demand in the Lower Division States through the prior appropriation system (and absent any voluntary agreement between the states that dictates otherwise) Central Arizona's Colorado River water is cut first and continues to be cut in increasing amounts until higher priority rights are satisfied or until there is no water left to deliver through the CAP canal.

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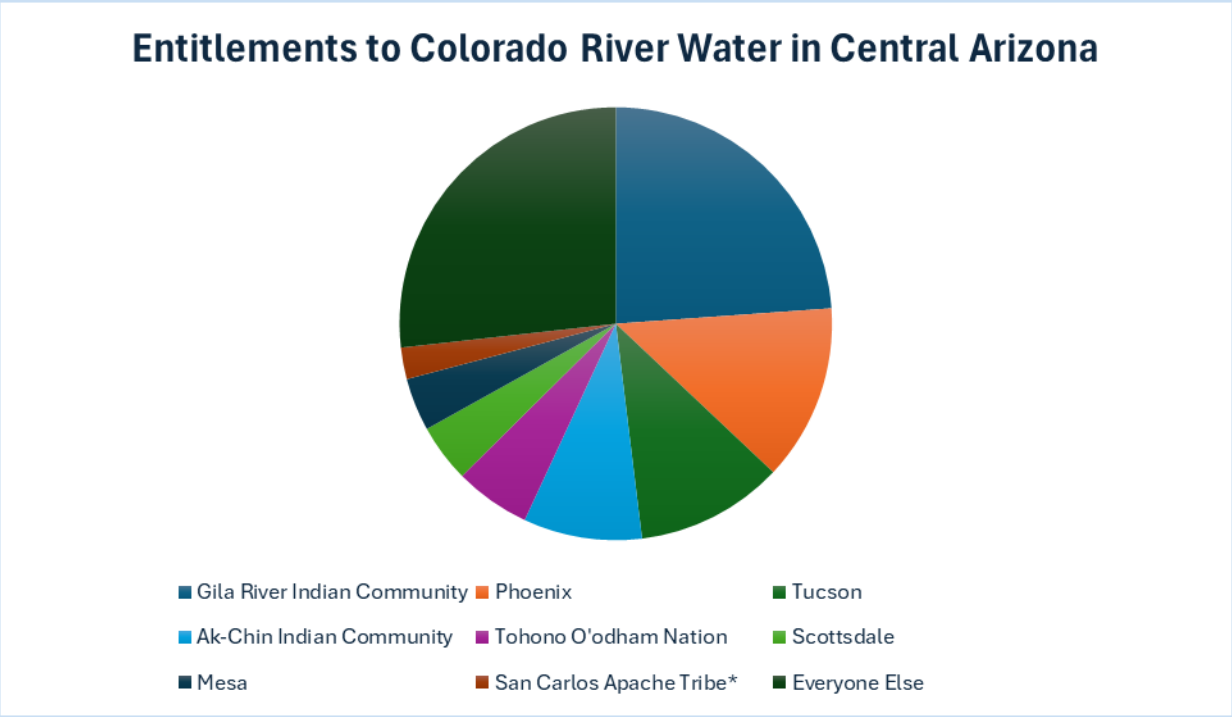
[7] 1968 Colorado River Basin Project Act (43 USC 391).

[8] Though, some of Nevada's water is also of the same priority and is subject to cuts during shortage alongside CAP water.

[9] Kuhn and Fleck, *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River,* University of Arizona Press, 2019, chapter 15

[10] Technically demands in the Lower Division States could total less than 7.5 million acre-feet and thus cause no curtailment to Central Arizona, but in an over-allocated river system this is unlikely to happen.

This is well known, but it is worth understanding who exactly is impacted by shortage cuts in Central Arizona. The Gila River Indian Community holds the largest entitlement of Colorado River water in Central Arizona (311,800 AF), followed by the cities of Phoenix (172,034 AF) and Tucson (144,191 AF), the Ak-Chin Indian Community (105,800), the Tohono O'Odham Nation (74,000 AF), and various other entitlement holders up to a sum total of 1,415,000 AF for all long-term contracts delivered through the CAP.[11]



*The San Carlos Apache Tribe also has access to certain Colorado River water not used by the Ak-Chin Indian Community

Entitlements to Colorado River water in Central Arizona are important but *access* is just as important; tribes, cities, power and mining companies and others lease and exchange Colorado River water among each other. Some lease or exchange water out and others gain additional access through these transactions.

Finally, CAP water is delivered under its own priority system. From highest to lowest these are: priorities 2 and 3 (68,400 acre-feet[12]), M&I and Indian priorities (which are somewhat co-equal, approximately 982,000 acre-feet), non-Indian agricultural priority (approximately 365,000 acre-feet), and "excess" priority, a category only available when

[11] A little less than 120,000 AF of the 1,415,000 AF of total available long-term contracts for CAP Water remains unallocated, generally held for future Indian water rights settlements. The vast majority of this water is low in the CAP priority system.

[12] 47,500 AF for the Ak-Chin Indian Community and 20,900 AF for seven cities in the Phoenix area, though oddly through an exhibit to the Salt River Pima-Maricopa Indian Community settlement the seven cities voluntarily agreed that the 20,900 AF of water should be cut during shortage on a mathematical formula that now produces nonsensical results.

enough CAP water is available to meet all demands for long-term contract water and additional water remains. The same entity often has access to Colorado River water of many different priorities; the City of Scottsdale as an example has contractual entitlements to Priority 3, M&I, Indian and non-Indian Agricultural priority water and leases water from the San Carlos Apache Tribe, the Gila River Indian Community and the Salt River Pima-Maricopa Indian Community.

Because of the priority system that governs CAP water deliveries, as well as the leases and exchanges that alter access between entitlement holders, it is complicated to describe whose Colorado River water gets cut most significantly in Central Arizona during different shortage conditions.[13] However, in general and in most conditions, the Gila River Indian Community and the City of Phoenix are hit hardest because they have the largest allocations of the lowest-priority CAP water available for long-term contract.

As an example, presented below are the estimated largest cuts in acre-feet and in percentages of non-shortage access when there is 800,000 acre-feet of Colorado River water available for delivery through the CAP canal.

Shortage Impact* at 800KAF Deliveries in the CAP Canal		
	AF Loss	% Loss
Gila River Indian Community	109,999	0.63
Phoenix	84,423	0.42
CAGRD[1]	40,938	0.71
Tucson	37,026	0.26
Ak-Chin Indian Community	23,633	0.22
Scottsdale	23,178	0.29
Mesa[2]	17,786	0.23
Tohono O'odham Nation	14,595	0.26
EPCOR	11,868	0.35
Freeport McMoran	10,704	0.24
Peoria	8,762	0.26
Chandler	8,271	0.24

*Shortage impact is based on access, which generally means entitlement plus/minus water leased or exchanged plus any federal firming obligations.
[1]CAGRD is the Central Arizona Groundwater Replenishment District, a department within the Central Arizona Water Conservation District.
[2]Mesa's cuts are based on full implementation of its reclaimed water exchange with the Gila River Indian Community.

Arizona agreed to the junior status of the water delivered through the CAP in 1968, at a time when the project was intended to be used as a supplemental surface water supply to replace groundwater pumping (mining) by agriculture in Central Arizona. Because of urbanization, CAP water uses today are different than what was envisioned in 1968. Today, CAP water is used for:

[13] The Kyl Center for Water Policy developed a shortage impact tool that can be found here: https://asu.maps.arcgis.com/apps/dashboards/37e786165c734e47918c1f4c3c0dbea5

• tap water deliveries

  - via direct delivery to surface water treatment plants,
  - via delivery to aquifer recharge facilities for subsequent recovery through wells (the aquifer acts as the treatment plant), and
  - via exchanges through which Salt and Verde River water is delivered (loaned) to surface water treatment plants and subsequently delivered outside the boundaries of the Salt River Valley Water Users Association (Off Project) and CAP water is delivered to the Salt River Valley Water Users Association to "pay back" these Off Project uses,

• tribal farming,

• water banking as a hedge against future shortage[14] and

• various other uses that are small and insignificant in scale (e.g. construction water, turf irrigation[15], etc.).

Also different today, tribal CAP allocations have doubled from their original amount; It is often not well understood that approximately 46% of the 1,415,000 acre-feet of Colorado River water available for long-term delivery contracts through the CAP is for tribes.[16]

Proposals for Floating Pools in Lake Powell

Broadly speaking, the Lower Division States have offered to accept the first 1,500,000 acre-feet of necessary reductions but have asked the Upper Division States to share in reductions above this amount.[17] In their December 30, 2024 "refined" proposal, the

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[14] Much of this water banking occurs at Groundwater Savings Facilities, where Colorado River water is delivered to an irrigation district or farmer and used in-lieu of groundwater. The groundwater saved becomes a long-term storage credit that can be recovered (pumped from a well) or sold. Through these groundwater savings facilities, a significant amount of Colorado River water still makes its way to agricultural fields in Central Arizona—around 160,000 acre-feet in 2024.

[15] The use of Colorado River water for golf course irrigation may be irritating to some, but these deliveries are around one percent of non-shortage deliveries through the CAP canal.

[16] Long-term contracts for Colorado River water delivered via the CAP were capped at 1,415,000 acre-feet through the 2005 Arizona Water Settlements Act (43 USC 1501). However, the Central Arizona Water Conservation District's contract with the Secretary allows it to "sweep" all unused Colorado River water not used by higher priority rights on the mainstem until Arizona's use of water equals its entitlement of 2,800,000 acre-feet. The CAP canal can physically deliver more than 1,415,000 acre-feet, and in years in which more is available, the Central Arizona Water Conservation District has authority to market this water as "excess" priority water to anyone in Maricopa, Pinal and Pima counties.

[17] *Lower Basin Alternative for the Post-2026 Coordinated Operation of the Colorado River Basin* (March 6, 2024) https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/2024-03-06_Lower_Basin_Alternative_Letter_Submittal_508.pdf. Note that the Upper Division States proposal also included a provision that recognized the natural hydrologic shortages. Letter from Colorado River Upper Division State Representatives of Colorado, New Mexico, Utah and Wyoming to Commissioner Camille Touton (March 5, 2024) https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/2024-03-05_UDS_Alternative_Submittal_508.pdf.

Upper Division States proposed a Floating Pool in Lake Powell.[18] Although the details are less than clear, the proposed pool would be filled by "Parallel" activities that may include conserved consumptive use water, non-consumptive use water, and releases from some upstream reservoirs such as Flaming Gorge. The water would be delivered to and saved in designated Floating Pools in Lake Powell. The Upper Division States' proposal notes that water stored in the Lake Powell Floating Pool could potentially be delivered to Lee Ferry when Lower Division States reductions exceed 1,500,000 acre-feet. Others have noted that such a Floating Pool could be stored either in Lake Powell or Lake Mead, so long as it is operationally neutral, and that flexibility in the place of storage could allow for enhanced environmental flows in the Grand Canyon.[19] Still others have proposed that Floating Pools, wherever stored, could be largely paid for, developed, and owned by the federal government.[20]

Though not stated in its proposal, in return, the Upper Division States may ask the Lower Division States to agree that they will not litigate 1922 Compact issues provided the system is being operated in accordance with the post-2026 operating guidelines.

Devil in the Detail

Details about place of storage and ownership, though important for various reasons, are less important than operational neutrality. Of utmost importance to the Lower Division States is the following: *absolute certainty that the water in the Upper Division States' Floating Pool is not consumed by another user before arriving in Lake Powell and that the water was actually conserved from existing consumptive uses.* This requires objective standards for certifying conservation efforts that created the water as well as evidence the water conserved was not diverted by another water user before reaching Lake Powell.

In a chronically over-allocated river system in which reservoirs are draining, if the water in the Upper Division States' Floating Pool includes water that does not have a history of consumptive use, water users in the Lower Division States (especially CAP water users) experience a direct loss of a like amount of water.

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[18] Upper Division States Alternative Refinements (December 30, 2024) http://www.riversimulator.org/2025Guidelines/Scoping/UpperDivisionStatesAlternativeRefinements2024.pdf

[19] See City of Phoenix Additional Concepts for Consideration (Email dated May 8, 2024) https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/2024-05-08_Additional_Concepts_for_Consideration_City_of_Phoenix_508.pdf; and *Conservation Groups' Cooperative Conservation Alternative for Post-2026 Colorado River Guidelines Operations and Strategies* (March 29, 2024) https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/2024-03-29_Final_Letter_re_Cooperative_Conservation_508.pdf.

[20] For example, the proposal distributed by the Gila River Indian Community at the December 2024 Colorado River Water Users Association meeting, on file at the Kyl Center for Water Policy.

Think of it this way: in a system of draining reservoirs that are filling buckets of water, the CAP water users' bucket is the last to be filled. Any water held back from this system that would otherwise have entered the system fills less water in the last-remaining bucket. In a similar way, any water designated for the Floating Pool that was diverted before arriving in Lake Powell has the same impact. Finally, water held in a Floating Pool must experience realistic evaporative losses or else evaporated water not assessed similarly fills less water in the last-remaining bucket.

By way of example, a proposal to fill Upper Division States' Floating Pools with currently unused tribal entitlements to Upper Division States' water would result in less water for Lower Division States on an acre-foot per acre-foot basis and ironically, would most significantly impact another tribe, the Gila River Indian Community, which holds the largest entitlement of the lowest priority water available for long-term contract in the CAP system.

To the degree that the water in the Upper Division States' Floating Pool is not consumed by another user before arriving in Lake Powell, was consumptively conserved from established demand, and is assessed realistic evaporative losses, water users in the Lower Division States experience no harm. Floating Pools can only form the foundation for a broad agreement if these conditions are met. Floating Pools that do not meet these conditions can only push the Lower Division States and particularly Central Arizona into litigation because they transform *uncertain loss* of water from shortage (future hydrology and Upper Division States' demands are unknowable) into *certain loss* via removal of water from the priority system that otherwise would have flowed to Central Arizona as the last cup to be filled in the Lower Division States.

Risks and Rewards of a Bargain

The Lower Division States and Central Arizona in particular must consider whether the amount of water expected to be delivered from the Upper Division States via the Floating Pools is large enough to forgo litigation. The added difficulty is that even if Floating Pools are established, if the Upper Division States increase their consumptive water use by an amount more than the water in the Floating Pool, the value of Compact litigation avoidance to the Lower Division States diminishes acre-foot for acre-foot. For example, if contributions to Floating Pools total 100,000 acre-feet per year yet the Upper Division States increase consumptive use by 150,000 acre-feet per year, the result is a net reduction of 50,000 acre-feet per year to the Lower Division States and in particular, Central Arizona. Floating Pools must be paired with an Upper Division States' consumptive use baseline volume, against which Floating Pool savings are measured and increased consumptive use must be offset.[21] This is the hard truth: every drop of

[21] There are many technical and policy questions related to an Upper Division State baseline that would have to be carefully negotiated. Due to hydrologic variability, consumptive uses vary from year to year. There are

water that either does not make it into Lake Powell or that is held in a Floating Pool which does not meet the necessary conditions (actually makes it to Powell, has a history of consumptive use, and is assessed realistic evaporative losses) fills less water in Central Arizona's cup of lowest priority.

Agreeing to a baseline and offsets is certain to be painful and politically difficult in the Upper Division States, so it is worth remembering that cuts to existing uses in Central Arizona are equally if not more painful: the Upper Division States must forego **prospective** water uses over the term of the next operating agreement, and Central Arizona must forgo **current** water uses.

For the Upper Division States, rewards of a Floating Pool-based bargain during the term of the post-2026 operating agreement include avoidance of litigation over compact compliance, provision of water-rights certainty for continued economic development, and the ability to reduce consumptive water use for shortage sharing at optimal times and places rather than under duress.

The Upper Division States' risks are multiple: Can the Upper Division States agree on annual contributions to a Floating Pool in Lake Powell? Furthermore, with no guarantee that federal funding will be available in the future, how will each state pay for its share of the pool? The costs are not insignificant, at $500 -$700 per acre-foot, a contribution of 100,000 acre-feet per year equals a cost of $50 - $70 million per year (perhaps more if program management costs are included).

Additionally, the interim nature of an agreement creates added uncertainty for the Upper Division States because of their compact obligations at Lee Ferry. An interim agreement will expire, but the 1922 Compact does not. At the end of the post-2026 Interim Agreement, will the Upper Division States be in a better or worse compact position? Will they be left with a large flow deficit at Lee Ferry? These questions are difficult to answer. In theory, the states could agree to "freeze the compact clock," but how would a freeze agreement be structured and enforced?

Considerations on a Path Forward

Floating Pools, if carefully managed on both the state and federal levels, can provide a viable path forward to resolving deep divides between the users of the Colorado River that threaten to propel them to decades-long litigation and generational uncertainty.

Considering that all parties in the Colorado River share a common threat from declining river flows, finding a solution that encourages collaboration through shared conservation of a shared resource makes sense. However, nothing this complicated comes easy or

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major projects that are not operating at full capacity. Even without any newly constructed projects, consumptive uses could increase due to the impacts of warming temperatures by existing irrigated agriculture.

without shared sacrifice and it is important that all parties recognize this and make reasonable concessions where possible. Concepts of a Floating Pool have multiple uses and could be utilized in both the Upper and Lower Division States to mitigate the impacts of a declining Colorado River. Including reasonable limits to the size and scope of Floating Pools is necessary to achieve collective resilience among users in both Divisions while guarding against the shortcomings of current storage practices. It is especially important to maintain system conservation as a proven and valuable strategy in equalizing the benefits of conservation throughout the system.

The concepts described here involve significant pain for both Divisions. The Lower Division States must accept an immediate and likely permanent reduction in use, particularly in Central Arizona. It must also consider the likelihood of further reductions to water-right holders more senior than those in Central Arizona. The Upper Basin must accept a baseline based on current consumptive uses that may limit future growth opportunities. All users must acknowledge that managing available Colorado River water will entail more costs, in terms of financial incentives to create Floating Pools and, to the extent they are uncompensated, the economic losses that accompany verified conservation efforts. However, those losses must be weighed against the inherent uncertainty of litigation and the even greater uncertainty posed by delays in responding to a changing river in real time. It is possible to maintain valuable uses on the Colorado River even with declining flows. Floating Pools offer this opportunity without eliminating entire groups or classifications of users. Floating Pools have application in both Divisions and can be expanded to address multiple needs. A “grand” bargain should consider several floating pools: One for shortage sharing as suggested by the Upper Division States’ refined proposal, a second that could be used to mitigate the impacts to existing or future uses, and a third that could be used to develop and manage Tribal entitlements. Obviously, the details and operational rules would have to be carefully negotiated.

While the concept of creating storage in Lakes Powell and Mead is not new, a Floating Pool proposal inherently creates trade-offs between existing and future uses that varies from the traditional shortage sharing priorities found in the Law of the River. We are, however, facing challenges not foreseen by the drafters of the Law. Without some new and imaginative thinking, the alternative may be to turn the future of the river over to the nine justices of the United States Supreme Court. That alternative is the least likely to produce a result which allows for the flexible management of a changing river system and potentially sets up the parties for continuing legal challenges. Cooperation among Colorado River water users now is essential to creating working relationships that can manage changing river conditions. The viability of the economy in the West is at stake.