December 20, 2022

Reclamation 2007 Interim Guidelines SEIS Project Manager
Upper Colorado Basin Region,
125 South State Street, Suite 8100
Salt Lake City, Utah 84138

via email: CRinterimops@usbr.gov

RE: Supplemental Environmental Impact Statement for Near-term Colorado River Operations

Dear Reclamation SEIS Project Manager:

We submit the following scoping comments for the development of the Supplemental Environmental Impact Statement for Near-term Colorado River Operations (87 FR 69042). We appreciate the leadership of Commissioner Touton in mobilizing an appropriate response to the rapidly declining storage in the Colorado River system, and we look forward to working with you as you develop and implement much-needed additional actions and policies to protect the system and the people and ecosystems that depend on it.

Several speakers at last week's conference of the Colorado River Water Users Association emphasized the importance of an "all hands on deck" approach to the current crisis, and we agree. As Interior and Reclamation consider new approaches and concepts, they should also coordinate with other federal agencies to leverage their respective authorities to address the crisis. This should include authorities for additional funding to incentivize additional water conservation and efficiency improvements and funding to mitigate the impacts to economic and public health and environmental resources from implementing durable solutions.

Overview

The current crisis facing the Colorado River system is a major test of the Nation's ability to respond to the effects of climate change that are already upon us. On June 14, 2022, Commissioner Touton publicly alerted the Colorado Basin states of the need to prepare for reductions of 2 to 4 million acre-feet of Colorado River water next year, or as much as 1/3 of the amount of water delivered in a typical year. Sharply declining water levels behind both Hoover Dam and Glen Canyon Dam raised alarms about the system's ability to continue to supply water and power, forcing the states to consider what was previously unthinkable.

The writing has been on the wall for some time. It was long known that the Colorado was over-allocated during the interstate compact negotiations of the 1920's, and that both the Basin states and the Bureau of Reclamation ignored this reality for decades. Numerous studies, scientists, and engineers warned that diversions from the Colorado were unsustainable.

Ten years ago, the Bureau, in cooperation with the basin states, completed the Colorado River Basin Water Supply and Demand Study. This 2012 report was the first comprehensive effort by state and federal agencies to factor the impacts of climate change into long-term projections for the basin. While

many scenarios were evaluated, the trend was clear. A comparison of the median water supply projections against the median water demand projections showed a projected imbalance in supply and demand reaching 3.2 million acre-feet by 2060.

Unfortunately, state leaders and stakeholders do not have 40 years to ponder and process the seismic shift that is now taking place. In an ideal world, major cuts in water use would be phased in over a decade or more, with accommodations and adjustments made at a manageable pace. But the opportunity for gradual adjustments has passed, and a soft landing for every impacted water user may not be obtainable in the near term.

When the first shortage declaration for Lake Mead was made in 2021, California was spared while Nevada and Arizona were curtailed for 2022. Similarly, when the second shortage determination was made in 2022, California was again spared while Nevada and Arizona were further curtailed for 2023. Going forward, the DCP's asymmetric application of water reductions must give way to a more equitable apportionment of supply constraints to achieve the even larger reductions that will be necessary. As the largest user of Colorado River water by far, California must anticipate receiving its full and fair share of reductions. Fairness also demands that reductions must involve both the urban and agricultural sectors. And 2023 should mark the beginning of permanent reductions in Colorado River withdrawals, not simply the adoption of short-term expedients, such as temporary fallowing of irrigated land. 2060 has arrived sooner than expected.

Recommendations for SEIS Scoping

We offer comments on the following specific topics:

- Tribal Water Rights
- Reclamation's modeling assumptions with respect to Upper Basin depletions,
- Determination of Lake Mead Operation "Shortage Conditions"
- Coordinated Operation of Lake Powell and Lake Mead
- Best Practices for Water Efficiency
- Allocation of Lower Basin Evaporation
- Community and environmental protections
- Off-Stream Storage

For inclusion in the record of this SEIS, we have also attached the Pacific Institute's September 1, 2022 "pre-scoping" comments on the post-2026 guidelines, most of which are applicable for near-term Colorado River operations.

Tribal Water Rights

Provision must be made in this and future deliberations on Colorado River operations for the full and timely engagement of Tribal representatives and respect for Tribal water rights. In its role as Trustee, the Department of the Interior should ensure that Tribes receive support for independent analysis of the impact that any proposed modifications or alternatives will have on their individual water rights and interests, both immediately and in the longer term. This will require frequent and meaningful consultation with individual tribes whose interests are likely to be affected as alternatives are

developed. And in all scenarios, executed Tribal water rights settlements must be fully honored, and resolution of pending claims not foreclosed.

Modeling Assumptions with Respect to Upper Basin Depletions

Reclamation should clearly describe all modeling assumptions and inputs used in its projections of unregulated inflows into Lake Powell. In particular, Reclamation should provide a table listing assumed annual Upper Basin depletions. Does Reclamation use the Upper Colorado River Commission's June 14, 2022, Updated Demand Schedule? An average of recent depletions reported in the provisional *Consumptive Uses and Losses reports*? Recent averages modified by presumed water availability under hotter and drier conditions? Clarifying these modeling assumptions will improve our understanding of potential inflows to Lake Powell and projected elevations at Powell and Mead.

Lake Mead Shortage Conditions

The rapid and continuing loss of system storage has demonstrated that existing reservoir elevation-based shortage criteria are insufficient. A more aggressive set of Lower Basin shortage criteria that also accounts for current and projected basin runoff should be implemented. Reclamation should consider an alternative that determines Lake Mead "Shortage Conditions" based on factors including estimates of current and future runoff under very dry conditions (such as 2002-2004 or 2020-2022 runoff), existing storage in Lake Mead and Lake Powell, Treaty obligations, contractors' 2023 water orders, and operational and regulatory constraints such as the federal Endangered Species Act and Grand Canyon Protection Act requirements.

Reclamation should also consider a shortage alternative that ignores Lake Mead elevation once an August 24-month minimum probable projection shows it falling below 1075' and simply limits Lake Mead releases to prior year inflows less reservoir evaporation. For example, under this alternative Reclamation would limit Lake Mead releases in 2023 to 7.77 MAF (equivalent to WY22 inflows to Lake Mead) minus Mead evaporation (about 0.5 MAF) for a total release of about 7.3 MAF.

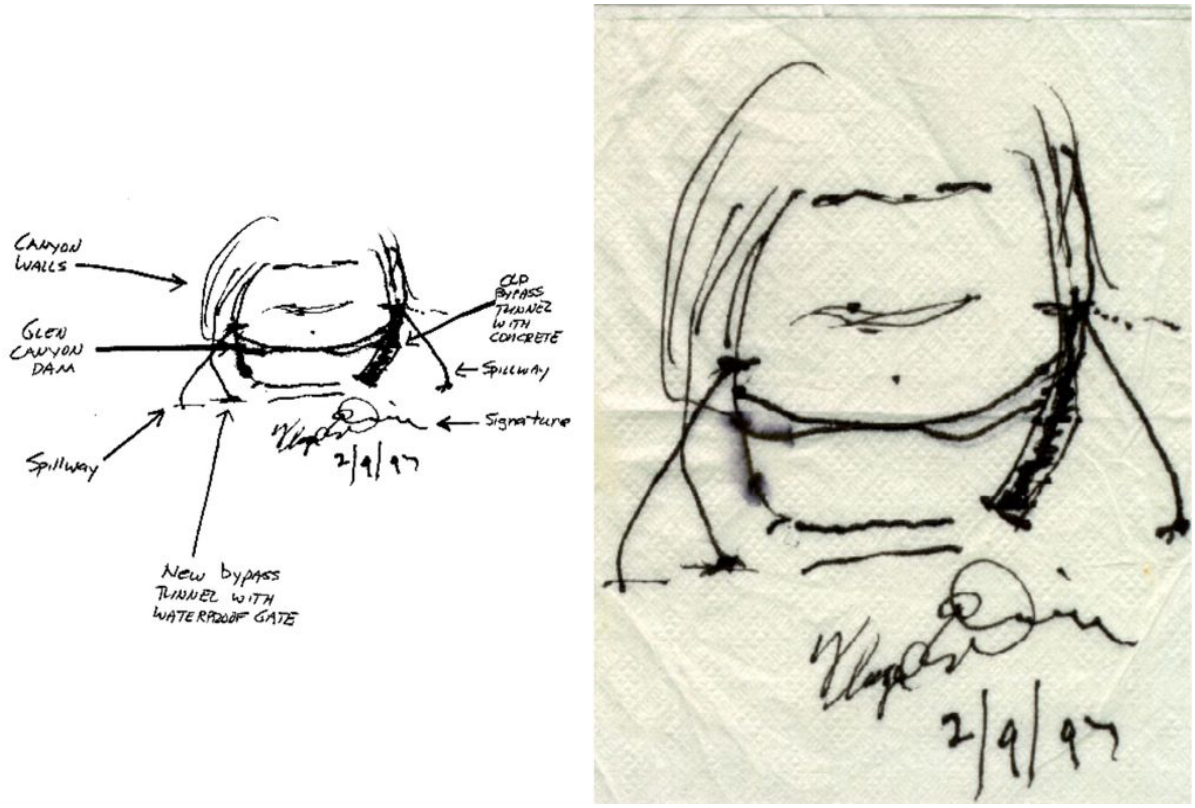
Shortage Measures

Reclamation should expand the pool of parties eligible to create Intentionally Created Surplus (ICS) beyond existing Colorado River contractors to include water agencies and other entities with existing agreements to use Colorado River water, such as retail water agencies or sub-wholesale agencies. Reclamation should eliminate the existing limits on the total quantity of Extraordinary Conservation ICS and DCP ICS that may be accumulated in ICS and DCP ICS accounts, while maintaining existing limits on delivery of such water.

As part of its efforts to "Prioritize and prepare for additional administrative initiatives that would ensure maximum efficient and beneficial use of urban and agricultural water, and address evaporation, seepage and other system losses in the Lower Basin," Reclamation should evaluate a measure limiting deliveries to contractors who do not receive return flow credits to allow for no more than median levels of system losses. That is, if median system losses for such contractors are currently 10% but a particular contractor's system losses are 20%, Reclamation would reduce deliveries to that contractor by 10%. Such a measure could further encourage best practices and reduce system waste; when paired with federal water efficiency incentives, it could reduce system demands without affecting productive uses.

Coordinated Operations

Reclamation should also include a modeling scenario that – for the purposes of improving our understanding of system resilience under a broad range of alternatives – consolidates storage at Lake Mead and uses Lake Powell as auxiliary storage. As former Reclamation Commissioner Floyd Dominy sketched more than twenty-five years ago (see image below), this modeling scenario would assume the construction of a new bypass tunnel around Glen Canyon Dam. This consolidated scenario would preferentially fill Upper Basin reservoirs first, then Lake Mead, before impounding water in Lake Powell. Under Reclamation's existing modeling scenarios and a continuation of recent low runoff, projected reservoir elevations hover at or below power pool. A consolidated reservoir modeling scenario presumably would ensure that at least one dam would still generate hydropower, providing a clear renewable energy benefit (and reducing carbon emissions) while supplying sediment and a more natural flow regime to the Grand Canyon. We are not advocating such a solution, but as part of the scoping process we encourage Reclamation to explore a broad range of modeling scenarios to better inform future decision-making.



Source: https://www.sltrib.com/news/environment/2022/08/28/floyd-dominy-built-glen-canyon/

Under the proposed consolidated reservoir modeling scenario, Reclamation would continue to model Lake Mead elevations using the 24-month study concept of "operational neutrality," to ensure that Lower Basin shortage criteria remain effective. Once storage is consolidated in Lake Mead, Reclamation could limit releases from Lake Mead based on inflows to Lake Mead less Mead evaporation, as described above.

Best Practices for Water Efficiency

When scoping the two action alternatives for this SEIS (Consensus-Based Agreement; Modification Under Secretarial Authorities), Reclamation overlooked an approach that straddles this binary choice: a scenario under which water withdrawals are conditioned upon the adoption of best practices for water efficiency that are already in use within the Colorado Basin states.

Many important policies to promote water efficiency have been developed in the Basin states, but most are not universally applied. A non-exhaustive list would include –

- Require removal non-functional turf grass. (Nevada)
- Incentivize landscape conversion and turf removal statewide. (California, Utah)
- Adopt stronger efficiency standards for plumbing and equipment. (Colorado, California, and Nevada)
- Require urban utilities to report distribution system leakage, and to meet standards for reducing water losses. (California)
- Require all new urban landscapes to be water-efficient. (California)
- Require metering of landscape irrigation turnouts (Utah)
- Ensure that existing buildings are water-efficient when they are sold or leased. (Los Angeles, San Diego)
- Require agricultural water deliveries to be metered and priced at least in part by volume. (California)

The technologies and practices that save water in urban and agricultural contexts are well known and available today. Reclamation should collate the best practices found within the basin, and fashion a third action alternative (or an "efficiency module" for the two currently proposed action alternatives) that will condition a portion of future withdrawals on the adoption of best practices by a date certain. Such measures alone are unlikely to provide the volume of water savings in the near-term that is needed to protect critical reservoir elevations. Nevertheless, the avoidance of water waste and unnecessary consumption should be the *first* place to look for demand reductions, and these are concepts that should be integral to Colorado River operations going forward.

Water efficiency is a proven pathway to water reliability, and the tools are at our fingertips if we choose to use them. Los Angeles uses *less* water today than it did 50 years ago, even while supplying a population that has grown by nearly 50%. Yet even cities and states that have led the way in key areas of water efficiency still need to catch up in others. Now is the time to act on all reasonable options at hand.

Allocation of Lower Basin Evaporation

The scope of this SEIS should include the allocation of Lower Basin Evaporation, to ensure that Reclamation is fully prepared to take this important step in the 2023-2024 timeframe along with other operational modifications under discussion in the FR notice. While a portion of Upper Basin evaporation has been assigned to individual Upper Basin states, the entirety of Lower Basin evaporation – estimated at 0.8 MAF for 2021 -- is borne by the system, rather than that the states. This glaring difference between Upper and Lower Basin accounting hinders partnership and cooperation. Allocating evaporation from Lower Basin reservoirs to Lower Basin contractors at a rate proportional to their water

use would address this inequity and provide a well-founded basis for retaining roughly 0.8 MAF annually in storage at current reservoir elevations. We commend the Commissioner's August 16 announcement that notes a likely federal rulemaking to "address evaporation, seepage and other system losses in the Lower Basin" and urge that necessary environmental evaluation be undertaken as part of this SEIS.

Community and Environmental Protections

As was noted in the September 1 letter from Pacific Institute (attached), communities and ecosystems should not suffer additional harms in the interests of protecting system storage. Each action alternative in this SEIS must include elements that fully mitigate the environmental and community impacts of water use reductions. The curtailment of water deliveries to irrigation districts will undoubtedly impact farm labor and farm worker communities. This SEIS should consider and evaluate potential scenarios for repurposing of lands removed from irrigation, consistent with the views and preferences of impacted communities.

Existing recovery programs, such as the Lower Colorado River Multi-Species Conservation Program, should be reviewed and likely expanded to ensure that diminished flows do not compromise species and habitat targets. Reclamation and other federal agencies should also commit to the long-term protection of associated ecosystems, such as the Salton Sea and the remnant Colorado River delta, that will suffer as contractors reduce their water use unless protective steps are taken concurrently.

Off-Stream Storage

Off-stream storage is antithetical to the concept of protecting critical reservoir elevations. Depleting system reservoirs to store Colorado River water elsewhere just exacerbates the current crisis. Reclamation should not authorize or deliver water for off-stream storage or groundwater recharge - including water exchanges used for such purposes - until system storage recovers.

We urge Reclamation to act quickly and initiate the additional rulemaking necessary to implement the elements and strategies we and others have recommended to address the immediate and worsening conditions in the Colorado River Basin.

Thank you for your consideration of these comments.

Sincerely,

Michael J. Cohen
Senior Researcher
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Edward R. Osann
Senior Policy Analyst
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PACIFIC INSTITUTE

Research for People and the Planet

September 1, 2022

Carly Jerla
Senior Water Resources Program Manager
Bureau of Reclamation

Via email: CRB-info@usbr.gov

RE: Request for Input on Development of Post-2026 Colorado River Reservoir Operational Strategies for Lake Powell and Lake Mead Under Historically Low Reservoir Conditions

Dear Ms. Jerla:

The Pacific Institute submits these comments in response to the above-referenced notice published in the June 24, 2022, Federal Register. The Institute has been actively engaged in the development of Colorado River policies and strategies for almost 25 years, participated in the development of alternative surplus and shortage guidelines for the river and the 2012 Basin Study, and has published many reports and articles on the sustainable use of Colorado River water. We focus our comments on potential substantive elements and strategies for Colorado River operations to address low-reservoir conditions in the Basin.

Despite the extraordinary conservation and cooperation of Colorado River water users and stakeholders over the past 15 years and the nearly three million acre-feet (MAF) of "Intentionally Created Surplus" (ICS) water stored in Lake Mead, Colorado River system storage continues to plummet. The August 24-month "minimum probable inflow" study projects the elevation of Lake Powell to drop below the minimum power pool elevation by the end of next year, requiring bypass flow releases that could damage pipes not designed for that purpose and threatening the water supply for Page, Arizona and the LeChee Chapter of the Navajo Reservation. Under this minimum probable scenario (based on the past 30 years of Colorado River flows, including the wetter pre-drought 1990s), the elevation of Lake Mead falls every month, dropping almost 50 feet over the next two years. Without significant and meaningful additional water reductions next year, continuing aridification of the basin means that the reality could be even worse than Reclamation's projections.

Time is of the Essence

The Colorado River system lost almost 5.5 MAF of storage in 2021. As of August 28, total system storage was below 20 MAF. Simple math suggests that we cannot wait until 2026 for new operational guidelines. Reclamation must act quickly and decisively to avert the impending crisis. We commend the Commissioner's June 14 call for an additional two to four MAF of water use reductions *next year* and thank her for the initial "administrative actions" announced on August 16. In light of the critical reservoir conditions projected by the most recent 24-month study and the still unmet need to reduce Colorado River water use by an additional two to four MAF, we urge Reclamation to consider our

recommendations, as well as the recommendations and suggestions others submit in response to Reclamation's "Request for Input," for implementation as soon as possible and not wait until 2026. Given the serious, near-term threats declining system storage poses to Colorado River users, we also urge Reclamation to broaden the scope of the proposed action beyond "Colorado River Reservoir Operational Strategies" to include the full spectrum of potential local, state, and federal actions that could decrease Colorado River use (assuming that federal funds could help support local and state actions).

Recommended Actions

We urge Reclamation to incorporate the following substantive elements and strategies for Colorado River operations to address low-reservoir conditions in the Basin as quickly as possible. We recognize that most of these will require additional rulemaking and agreement from the basin states and urge Reclamation to initiate such rulemaking procedures promptly.

- Support state and local water agency efforts to decarbonize their own operations;
- Allocate evaporation from Lower Basin reservoirs to Lower Basin contractors at a rate proportional to their water use;
- Accelerate canal lining projects;
- Fully mitigate environmental and public health impacts of water use reductions;
- Pursue alternatives to drought profiteering;
- Eliminate ICS/DCP ICS storage limits;
- Expand ICS/DCP ICS eligibility; and
- Explore opportunities for private investment in water use reductions.

Decarbonize Operations

During the continuing 23-year drought, Colorado River runoff has been almost 20% lower than it was last century – a loss of about 2.5 MAF annually. Udall and Overpeck, among others, estimate that a third or more of this loss can be attributed to anthropogenic climate change. Yet, discussions about appropriate elements and strategies to address low-reservoir conditions in the Basin ignore the carbon emissions driving aridification. Reclamation should work with other federal agencies to leverage funding available under the Inflation Reduction Act and other sources to support state and local water agency efforts to reduce energy use and decarbonize their own operations. This is especially critical as declining reservoir elevations depress hydropower generation, requiring some water users to purchase fossil fuel-generated electricity to power the pumps conveying Colorado River water to their service areas, as well as to treat and convey water within their service areas.

Reclamation and other federal agencies should do more to support efforts to recapture energy embedded in wastewater and help the water sector become an energy producer. For example, the East Bay Municipal Utility District's wastewater treatment facility in Oakland is now a net energy producer. The facility accepts food waste and fully offsets the energy required for wastewater treatment and for recycling water. Such energy recapture is becoming increasingly common in other parts of the world; federal support can accelerate its adoption in the Basin.

In addition to supporting agency efforts to decarbonize their energy sources for treatment and conveyance, Reclamation should support efforts to decarbonize local and state water agency fleets,

improve energy efficiency in their buildings, and promote end-use municipal water reductions for energy savings - including indoor use, even if indoor return flow credits would otherwise diminish the agency's consumptive use. Reclamation should also lead by example and accelerate its own efforts to implement the President's December 8, 2021, Executive Order, expediting the acquisition of zero-emission vehicles and reducing building emissions by at least 50 percent by 2026 in Regions 7 and 8.

Allocate Lower Basin Reservoir Evaporation

In 2020, the estimated main stem reservoir evaporation allocated to the Upper Basin as a whole was about 0.45 MAF, with an additional 0.24 MAF allocated to individual Upper Division states. In 2021, Lake Mead lost about 0.51 MAF to evaporation (and about 0.54 MAF in 2020), while Lake Mohave and Lake Havasu lost an additional 0.3 MAF, but these losses were borne by the system as a whole and not by the Lower Basin or individual states. This glaring difference between Upper and Lower Basin accounting hinders partnership and cooperation. Allocating evaporation from Lower Basin reservoirs to Lower Basin contractors at a rate proportional to their water use would address this inequity and would reduce total water use by roughly 0.8 MAF annually (at current reservoir elevations). We commend the Commissioner's August 16 announcement that notes a likely federal rulemaking to "address evaporation, seepage and other system losses in the Lower Basin." Agreement among the seven basin states to allocate Lower Basin reservoir evaporation should also include an Upper Division States agreement to limit their consumptive use (in years in which Lake Mead's elevation is projected to be below elevation 1,075 feet on January 1) to the volume reported for 2021, complementing the Upper Division States' July 18 5 Point Plan.

Reclamation could waive Lower Basin reservoir evaporation allocations when total Colorado River system storage is projected to exceed 60% on January 1 and decrease such allocations by 67% and 33% at the 55% and 50% capacity projections, respectively. To reduce the impact of such allocations on contractors, Reclamation should embark on an aggressive, large-scale program to line Lower Basin canals (see below). Protests about the potential impairment of the beneficial use of present perfected rights might be avoided by Interior's proposed prioritization and preparation "for additional administrative initiatives that would ensure maximum efficient and beneficial use of urban and agricultural water." Reconciling contractors' reliance on existing federal infrastructure and management for timely water deliveries in exchange for Lower Basin reservoir evaporation allocations could prove less objectionable and more conducive to long-term system stability than efforts to redefine and monitor efficient and beneficial use of practices such as filling residential swimming pools, watering non-functional turf, or irrigating forage crops for export.

Accelerate Canal Lining Projects

Canal lining and similar water efficiency projects can yield large volumes of water while minimizing or avoiding direct impacts to individual contractors (though, as noted below, such projects can generate significant adverse third-party impacts). For example, a former irrigation district general manager noted that lining the East Highline Canal in Imperial Valley could conserve on the order of 0.1 MAF per year. If Reclamation has not already done so, it should compile an inventory of major unlined conveyances in the Basin and volumes that could be conserved by upgrading this infrastructure. Reclamation should then invest directly in such projects – meeting federal goals to generate system water – or allow other contractors to create extraordinary conservation DCP ICS by investing in such projects.

Fully Mitigate Impacts of Water Use Reductions

Communities and ecosystems should not suffer additional harms in the interests of protecting system storage. Reclamation must fully mitigate the environmental and community impacts of water use reductions. Existing recovery programs, such as the Lower Colorado River MSCP, should be reviewed and likely expanded to ensure that diminished flows do not compromise species and habitat targets. Reclamation and other federal agencies should also commit to the long-term protection of other ecosystems, such as the Salton Sea and the remnant Colorado River delta, that will suffer as contractors reduce their water use to protect Colorado River system storage.

For example, Reclamation and other agencies at the Department of the Interior should increase their support for projects to protect public and environmental health in the Salton Sea region, including the State of California's Salton Sea Management Program (SSMP). This should include:

- Funding for the capital and long-term operations & maintenance costs of new habitat and dust suppression projects atop lakebed exposed due to extraordinary water conservation efforts in the region in response to the Commissioner's June 14 statement;
- Funding for new habitat and dust suppression projects atop the thousands of acres of federal lands currently exposed below the Sea's 2003 shoreline;
- Expedite federal action on land access and permitting for Salton Sea projects;
- Technical support from MSCP staff on SSMP habitat design and construction;
- Scientific support, in the form of a new, fully staffed USGS Salton Sea Science Office to coordinate ongoing and new research and manage air quality, biodiversity, and water quality monitoring;
- Transfer ownership of the former U.S. Naval test base to the state or county, for a SSMP headquarters and a research and visitor center;
- Federal funding support for at-risk and failing community water systems in the Imperial and eastern Coachella valleys;
- Potable water for the Torres-Martinez reservation; and
- Air filters for schools, public health clinics, libraries, and community centers in the Imperial and eastern Coachella valleys.

The Department of the Interior should memorialize the above commitments in a new MOU with California's Natural Resources Agency, to update the 2016/2017 state and federal Salton Sea MOU.

When utilities are faced with financing additional water infrastructure and water supplies, they typically pass down those costs to their consumers. As a result, communities may face problems with their access to safe, reliable, and affordable water bills. Federal funding for utility-level conservation, efficiency, and affordability programs will help low-income and disadvantaged communities maintain access to affordable water, while also ensuring affordable and sustainable water supplies for the community at large.

Drought Profiteering

The Paycheck Protection Program demonstrated that federal efforts to mitigate a crisis will incur some abuse. As others have noted, drought profiteering proposals do not promote cooperation. In reviewing proposals for temporary, compensated water use reductions, Reclamation should cap annual payments

for water in the context of the market price for land in the area. In some cases, it may be more cost effective for Reclamation to simply purchase available land in the area – or offer to purchase land in the area – than to pay exorbitant rates for temporary fallowing. Purchased land could be dedicated to local community uses and habitat mitigation.

Eliminate ICS/DCP ICS Storage Limits

Reclamation should eliminate the existing limits on the total quantity of Extraordinary Conservation ICS and DCP ICS that may be accumulated in ICS and DCP ICS accounts, while maintaining existing limits on delivery of such water.

Expand ICS/DCP ICS Eligibility

Dire conditions in the basin compel us to move beyond intra-state disputes and use every tool available to protect critical reservoir elevations. Reclamation should expand the pool of parties eligible to create ICS beyond existing Colorado River contractors to include water agencies and other entities with existing agreements to use Colorado River water, such as retail water agencies or sub-wholesale agencies. In instances where such entities are not able to reach an agreement to create a sub-account under that of the Colorado River contractor from which they currently purchase water, Reclamation should create such a sub-account directly, following existing rules for ICS/DCP ICS creation, review, and approval. One such water user has expressed an interest in storing 0.05 MAF annually in Lake Mead; presumably, other water users would also participate, benefitting the system as a whole.

Reclamation should also expand ICS/DCP ICS eligibility to enable participation from municipal water agencies for extraordinary conservation efforts, such as turf replacement and fixture retrofits, in their own service areas and investments in other municipalities' water conservation projects. Wealthier communities could then invest in conservation and efficiency projects in less wealthy communities, benefitting both. Reclamation should also explore methods to account for permanent and temporary regulatory actions, such as prohibitions on non-functional turf and emergency water conservation ordinances and declarations. Accounting for such pro-active measures with DCP ICS credits could incentivize water agencies to implement such measures more quickly, reducing demand.

Support Corporate Water Stewardship

Adjusting Basin water use to current and future supply requires an "all-of-the-above" approach, where each sector contributes toward a solution. Leading corporations using Colorado River water are acknowledging and responding to water stress in the Basin. They are engaging in water stewardship activities primarily by funding water replenishment projects. There is great potential to increase the impact of the corporate sector on reducing and replenishing basin-wide water use. Corporations need support from public and NGO actors to help improve water management in corporate facilities and help improve water management in corporate supply chains (especially for supply chains that involve agriculture). Supporting leading corporations in their existing and forthcoming water stewardship efforts can further educate customers, shareholders, and other corporations, which can precipitate large scale behavior changes in water use. Greater alignment between private, public, and philanthropic actors will help drive innovation, scale good practice, and increase corporate investments and engagement, reducing Colorado River water use.

Potential Reductions in Water Use

Lower Basin contractors and water users in Mexico have dramatically reduced their reliance on the Colorado River in recent years. Without these extraordinary efforts – and the domestic and international agreements that made them possible – Colorado River system storage would be millions of acre-feet lower and Reclamation would have already had to take unilateral action, likely leading to years of litigation, paralysis, and little hope for a solution. Yet these extraordinary efforts have not been sufficient to keep pace with the continuing aridification of the basin and the very real threat that reservoir elevations will continue to decline.

Reclamation must act quickly to implement the substantive elements and strategies described above. These elements and strategies would likely need to move forward as a package, to achieve the consensus necessary for implementation. A holistic approach will be needed to overcome opposition from different sectors and different geographies, demonstrating that each is contributing to the stability of the system and improving predictability and reliability.

The following table estimates existing and potential additional reductions to protect reservoir elevations. Actions and rules in black currently exist (2022 Lower Basin contributions are 0.533 MAF, plus 0.08 MAF from Mexico; provisional reports indicate that Upper Basin use in 2021 was 0.5 MAF lower than it was in 2020); *actions in blue* are potential additional reductions, some described above and some that could be generated (at least in part) by the actions recommended above.

Annual Action	**Volume (MAF)**
Assign reservoir evaporation	*0.8*
LB shortage + DCP	1.1
MEX shortage + DCP	0.275
UB reductions (in 2021)	0.5
Additional AZ+CA	*0.6*
Additional Mexico	*0.225*
Annual Total	**3.5**

These potential additional reductions illustrate the magnitude of additional actions and effort required to bring basin water use in line with recent runoff. Total reductions in Mexico shown above are roughly proportional to those in the Lower Basin; we recognize that discussions about Mexico's additional contributions are beyond Reclamation's authority and include them for illustration only.

We urge Reclamation to act quickly and initiate the additional rulemaking necessary to implement the elements and strategies we and others have recommended to address the immediate and worsening conditions in the Colorado River Basin. Thank you for your consideration of these comments.

Sincerely,

Michael Cohen
Senior Associate
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