Natural Resources Defense Council
1314 2nd Street
Santa Monica, CA 90401

Via U.S. mail and electronic mail

May 6, 2025

The Honorable Douglas Burgum
U.S. Secretary of the Interior
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240
officeofthesecretary@ios.doi.gov; exsec_exsec@ios.doi.gov

The Honorable David Palumbo
Acting Commissioner, Bureau of Reclamation

U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240
dpalumbo@usbr.gov

Ms. Genevieve Johnson
Acting Regional Director, Lower Colorado Basin Regional Office, Bureau of Reclamation
U.S. Department of the Interior
P.O. Box 61470
Boulder City, NV 89006
gjohnson@usbr.gov

Dear Secretary Burgum, Acting Commissioner Palumbo, and Acting Regional Director Johnson:

Re: Petition to the Secretary of the Interior to Enforce Reasonable Use Requirements for Colorado River Lower Basin Water Deliveries by Issuing Guidance in the Reclamation Manual

I. Introduction

The Colorado River is a vital water source for 40 million people in the Southwest, providing not only drinking water but hydropower and support for 5.5 million acres of farmland.[1] However, from the start the River has been overallocated and "prolonged drought and low runoff conditions accelerated by climate change have led to historically low water levels," "threatening water deliveries and power production" for residents across seven states.[2] The need to reform the delivery process and use of Colorado River water has never been more apparent. The two largest reservoirs in the country, Lake Powell and Lake Mead, have fallen to 32% and 36% of their capacity, respectively.[3] A crisis in reliability of water supplies will worsen if nothing is done to ensure that Colorado River water, especially in the Lower Basin, is not wasted.

Petitioner Natural Resources Defense Council (NRDC), along with the Alamosa Riverkeeper, California Coastkeeper Alliance, the Great Salt Lake Waterkeeper, the Inland Empire Waterkeeper, the Los Angeles Waterkeeper, the Orange County Coastkeeper, the Russian Riverkeeper, the San Diego Coastkeeper, and the Utah Rivers Council, all of which join

[1] BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Colorado River Basin Water Supply and Demand Study Fact Sheet* (2013), https://www.usbr.gov/lc/region/programs/crbstudy/FactSheet_June2013.pdf; *see* Benji Jones, *Why the new Colorado River agreement is a big deal - even if you don't live out West*, VOX (May 23, 2023), https://www.vox.com/climate/2023/5/23/23734404/colorado-river-cuts-lake-mead-deal.
[2] U.S. DEP'T OF INTERIOR, *Interior Department Announces Actions to Protect Colorado River System, Sets 2023 Operating Conditions for Lake Powell and Lake Mead* (2022), https://www.doi.gov/pressreleases/interior-department-announces-actions-protect-colorado-river-system-sets-2023; *see* Miché Lozano, *Climate Change Forces Difficult Decisions Along the Colorado River,* NATIONAL PARKS CONSERVATION ASSOCIATION (Dec. 8, 2022), https://www.npca.org/articles/3336-climate-change-forces-difficult-decisions-along-the-colorado-river.
[3] NATURAL RESOURCES CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, *Nevada Water Supply Outlook Report* (May 1, 2024), at 5, https://www.wcc.nrcs.usda.gov/ftpref/support/states/NV/wsor/NV-WSOR-2024-5c.pdf.

this petition on behalf of themselves and their members, submits this petition asking the Bureau of Reclamation (Bureau) to exercise its authority to ensure that all of the Bureau's water deliveries to Colorado River Lower Basin users are reasonably required for beneficial uses and are not delivered for uses that are unreasonable. We request that the Bureau do so by issuing guidance in the Bureau's Reclamation Manual.[4]

Under existing law, the Bureau has the authority and duty to limit its water deliveries to prevent unreasonable uses of water, including via the regulation under Part 417 of the Code of Federal Regulations.[5] Part 417 governs the Bureau's authority and obligation to ensure that Colorado River water deliveries to Lower Basin users do not surpass what is "reasonably required for beneficial use" per 43 CFR § 417.2, and to follow the annual consultation process outlined in 43 CFR § 417.3 when approving water delivery requests, including its requirement that the Bureau's water delivery decisions "shall . . . be based" on factors related to the reasonable use and conservation of water. However, it is not currently exercising that authority in meaningful ways. In fact, the Bureau's current implementation of Part 417 reveals significant shortcomings in its stewardship and management of Colorado River Lower Basin water deliveries. Despite being required by regulation to ensure that water deliveries don't exceed those "reasonably required for beneficial use," the Bureau's approach fails to adequately assess water usage and is not sufficiently aimed at preventing waste. Instead of evaluating whether the volumes of water requested are reasonable and are being used efficiently, the Bureau undertakes little more than an accounting exercise wherein the Bureau provides whatever amount of water is requested by contractors so long as that amount falls within a water user's contractual allotments and is expected to be available within the following calendar year without seriously assessing wastefulness and without articulating any conditions to ensure the reasonable use of all water delivered. This process fails to incentivize reductions in unnecessary water use or improvements in efficiency, enabling current wasteful water uses in the Lower Basin to continue.[6]

Thus, for reasons detailed in this petition, we call on the Bureau to enforce the law by not providing water deliveries that exceed those reasonably required for beneficial use. In doing so, we request the Bureau reform its process for evaluating water users and their annual water delivery requests to ensure that all of the Bureau's water deliveries to Lower Basin users are reasonably required for beneficial uses and are not applied in a manner that is unreasonable, in accordance with law and the Bureau's stated commitments. Specifically, we request that the Bureau:

---

[4] This petition was crafted with the support and partnership of UCLA School of Law's Frank G. Wells Environmental Law Clinic and its faculty and students, who represented NRDC in this effort. The petitioners thank UCLA Law students Nicole Benalcazar and Melissa Hernandez for critical research and drafting support and are especially grateful to UCLA Law Emmett Institute fellow Brennon Mendez for his invaluable work in developing and finalizing the petition.

[5] 43 C.F.R. § 417 (promulgated pursuant to the Boulder Canyon Project Act of 1928, which authorized and directed the Secretary of the Interior to function as the contracting authority for Colorado River water use in the Lower Basin).

[6] *Big Ag, Big Oil, and the California Water Crisis,* FOOD & WATER WATCH (Feb. 2023), https://www.foodandwaterwatch.org/2023/02/01/california-water-crisis/.

(a) Undertake a process with stakeholder input to define the phrase "reasonably required for beneficial use," so that this phrase can better guide its decisions under Part 417;

(b) Develop a robust, consistent, and transparent process for determining whether Lower Basin water users are adequately avoiding wasteful, unreasonable uses of water in compliance with Part 417, which should account for factors such as climatic zones, evapotranspiration rates, type of irrigation, type of crop, farmgate delivery scheduling, distribution system leakage and losses, soil classification and suitability, and water access for all people in the Lower Basin states; and

(c) Require and perform periodic reviews of Lower Basin water users to ensure that all water deliveries are, in fact, being used reasonably.

We propose that the three requested actions above be accomplished by the Bureau publishing informal guidance in the form of Policies in the Reclamation Manual, which are signed by the Commissioner, with respect to (a),[7] and in the form of Directives and Standards in the Reclamation Manual, which are signed by "the Senior Executive of the program function as delegated by the Commissioner," with respect to (b) and (c).[8] Informal guidance has the benefit of allowing the Bureau to respond quickly, which is appropriate given the urgency of the problem and the fact that our proposal for the Bureau to issue guidance to the Reclamation Manual can be implemented immediately, in the existing regulatory landscape, notwithstanding the fact that the regulatory landscape will change at the end of 2026 upon the expiration of many governing documents including the 2007 Interim Guidelines and the 2019 Drought Contingency Plan.[9] While these issues may also be addressed in the ongoing planning process to develop post-2026 operating guidelines, the Bureau should act now, pursuant to its existing authority, to limit its water deliveries where needed to prevent unreasonable uses of water as mandated by Part 417.

II. Factual Background

---

[7] *See* BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Reclamation Manual: Policies* (last updated Jan. 10, 2025), https://www.usbr.gov/recman/policies.html ("Policies reflect the Commissioner's leadership philosophy and principles and defines the general framework in which Reclamation pursues its mission. Policy is structured to encourage innovation to accomplish implementation at the local level. Policies are signed by the Commissioner.").

[8] *See* BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Reclamation Manual: Directives and Standards* (last updated Mar. 21, 2025), https://www.usbr.gov/recman/DandS.html ("Directives and Standards provide the level of detail necessary to ensure consistent application of Policy Reclamation-wide. However, Directives and Standards are also structured to provide flexibility to local offices, allowing the unique aspects of each Reclamation project and program to be taken into consideration. Directives and Standards are signed by the Senior Executive of the program function as delegated by the Commissioner."). Directives and Standards are often used to guide the implementation of review processes in which the Bureau evaluates factual records and issues informal determinations (e.g., financial capability determinations).

[9] BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Reclamation announces 2025 operating conditions for Lake Powell and Lake Mead* (Aug. 15, 2024), https://www.usbr.gov/newsroom/news-release/4934.

It is widely acknowledged that climate change is adversely impacting the accessibility of water via more severe floods and droughts.[10] In times of drought when water is scarce, these conditions bring about an array of circumstances of great concern: reduced reliability of urban and agricultural water suppliers, wildfires, dust storms, and declining availability of in-stream water due to "diminished flows in rivers and streams [that] increase concentration of harmful pollutants."[11]

The effects of climate change are being felt acutely in the southwestern United States as drought continues to shrink the Colorado River's supply—a reality that the Bureau acknowledged in the Lower Basin Drought Contingency Plan Agreement: "entities that rely on the Colorado River as a water source face increased individual and collective risk of temporary or prolonged interruptions in water supplies, with associated adverse impacts on the society, environment and economy of the southwestern United States."[12]

The Colorado River Basin provides drinking water to 40 million people in the U.S. and two states in Mexico.[13] Additionally, it supports hydropower facilities in seven states and serves as a vital resource for agricultural communities, tribal nations, seven National Wildlife Refuges, four National Recreation Areas, and eleven National Parks throughout the Western region.[14] Despite the Colorado River Basin's status as one of the most important natural systems in the country, an unprecedented 23-year drought has led to record-low water levels at Lake Powell and Lake Mead—two major reservoirs along the River.[15] In 2023, Lake Powell experienced its lowest water levels ever recorded, reaching approximately 20% of its total capacity.[16] Should the water levels fall below the intake tubes for the hydropower turbines in Glen Canyon Dam, operators would be compelled to cease the operation of electric generators that provide power to approximately five million people across seven states.[17] Should the water levels drop even

---

[10] CALIFORNIA NATURAL RESOURCES AGENCY, *California's Water Supply Strategy: Adapting to a Hotter, Drier Future*, (Aug. 2022), at 2, https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Water-Resilience/CA-Water-Supply-Strategy.pdf.

[11] Josie Garthwaite, *The Effects of Climate Change on Water Shortages*, STANFORD DOERR SCHOOL OF SUSTAINABILITY (Mar. 22, 2019), https://sustainability.stanford.edu/news/effects-climate-change-water-shortages.

[12] BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Lower Basin Drought Contingency Plan Agreement* (2019), https://www.usbr.gov/ColoradoRiverBasin/documents/dcp/final/Attachment-B-LB-DCP-Agreement-Final.pdf; *see* Bradley Udall & Jonathan Overpeck, *The Twenty-First Century Colorado River Hot Drought and Implications for the Future*, 53 WATER RESOURCE RES. 2404 (2017), https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2016WR019638.

[13] BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Basin Report: Colorado River* (2016), https://www.usbr.gov/climate/secure/docs/2016secure/factsheet/ColoradoRiverBasinFactSheet.pdf.

[14] *Id.*; BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Colorado River Basin Water Supply and Demand Study Fact Sheet* (2013), https://www.usbr.gov/lc/region/programs/crbstudy/FactSheet_June2013.pdf.

[15] BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Final Supplemental Environmental Impact Statement for Near-term Colorado River Operations*, at 22 (2024), https://www.usbr.gov/ColoradoRiverBasin/documents/NearTermColoradoRiverOperations/20240300-Near-termColoradoRiverOperations-FinalSEIS-508.pdf; *see* Emily Cassidy, *Lake Powell Rebounds but Drought Remains*, NASA EARTH OBSERVATORY (Nov. 15, 2023), https://earthobservatory.nasa.gov/images/152082/lake-powell-rebounds-but-drought-remains.

[16] Emily Cassidy, *Lake Powell Rebounds but Drought Remains*, NASA EARTH OBSERVATORY (Nov. 15, 2023), https://earthobservatory.nasa.gov/images/152082/lake-powell-rebounds-but-drought-remains.

[17] John C. Schmidt et al., *The Colorado River Water Crisis: Its Origin and the Future*, WIREs WATER (June 17, 2023), https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wat2.1672.

further, reaching what is known as the "dead pool," the water levels might become too low to flow through the dam entirely.[18] A recent report by researchers from UCLA's Department of Atmospheric and Oceanic Sciences concluded that under existing policy, Lake Mead and Lake Powell "will face substantial risks before 2060, with at least 80% likelihood of reaching dead pool levels at least once."[19] Climate scientists have observed that the Colorado River has suffered from "runoff reductions of 10.3% due to anthropogenic increases in both temperature and CO_2 since 1880," with its "natural flow ha[ving] been decreased by roughly the storage of Lake Mead during the 2000–2021 megadrought due to this long term anthropogenic influence."[20]

Ongoing water shortages and water waste affect biodiversity and recreational values too, not just urban and agricultural water supplies. Conservationists, ecologists, and other environmental advocates have sounded the alarm that maintaining the status quo is untenable for the ecosystems that rely on the Colorado River, as plainly evidenced by recent droughts and water shortages. For example, conservation biologists have warned that the endangered desert pupfish and Gila topminnows are suffering from habitat loss due to declining Colorado River water levels, explaining that these fish "used to be present in large river systems, but the changes in the habitat and the introduction of non-native fishes have basically excluded them from all of those large historic habitats" such that "the only refuge where they can survive is these smaller habitats—these headwater streams and springs—and those are the exact types of places that are disappearing now."[21]

The Lower Basin also boasts numerous native plant species that are indispensable to riparian ecosystems and are harmed by low Colorado River water levels. Multiple species of cottonwood trees—including the native Frémont's cottonwood—grow on the banks of the River and are considered "keystone species" because they bring myriad benefits to surrounding ecosystems, such as "providing habitat and food for a wide range of animals and helping stabilize the riverbank" as a riparian buffer against erosion.[22] If "dead pool" levels were reached such that water can no longer flow downstream from Glen Canyon Dam, low Colorado River water levels and the resultant "warmer water would also create the conditions for toxic algal blooms to thrive, which would affect water quality" in harmful ways for countless endemic species as well as the 40 million people who rely on the River for drinking water.[23]

---

[18] *Id.*

[19] Bowen Wang et al., *Disentangling Climate and Policy Uncertainties for the Colorado River Post-2026 Operations,* NATURE COMMS. (submitted Sept. 30, 2024, currently in review), https://doi.org/10.21203/rs.3.rs-4177015/v1 (preprint).

[20] Benjamin Bass et al., *Aridification of Colorado River Basin's Snowpack Regions Has Driven Water Losses Despite Ameliorating Effects of Vegetation*, WATER RESOURCES RES., 59 (2023), https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2022WR033454.

[21] Tara Lohan, *Left Out to Dry: Wildlife Threatened by Colorado River Basin Water Crisis*, THE REVELATOR, CTR. FOR BIOLOGICAL DIVERSITY (Sept. 12, 2022), https://therevelator.org/wildlife-colorado-river/.

[22] Benji Jones, *These 8 Species Depend on the Colorado River. What Happens as It Dries Up?*, VOX (Apr. 21, 2023), https://www.vox.com/the-highlight/23658977/colorado-river-drought-lake-mead-wildlife-fish-birds.

[23] David Dudley, *What Does "Dead Pool" Mean for the American West?*, SIERRA: THE MAGAZINE OF THE SIERRA CLUB (May 8, 2023), https://www.sierraclub.org/sierra/what-does-dead-pool-mean-american-west; BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Basin Report: Colorado River* (2016), https://www.usbr.gov/climate/secure/docs/2016secure/factsheet/ColoradoRiverBasinFactSheet.pdf.

There are binational considerations at play, too. Mexico "is entitled to about 9 percent of the Colorado River's total flow," of which approximately 85% is sent to agricultural communities and the remaining 15% to cities, including the two largest cities in Baja California—Tijuana and Mexicali.[24] Many ecosystems in the Colorado River Delta in Baja California are suffering from low water levels. Thus, decisions north of the border regarding management of the River have significant implications for Mexico and its communities and ecosystems.

In short, the risks to the Colorado River water supply are unprecedented in their scale and gravity, and pose a uniquely severe threat to all those who depend on the waters of the Lower Basin.

Although a recent series of atmospheric rivers has provided some much-needed precipitation, water levels could again plummet to record lows if timely actions to conserve water are not implemented. Thus far, the Department of the Interior has placed the onus of water conservation on the states, yet the states have continually failed to come to an agreement on how to share the water delivery reductions that are needed to bring the system back into a sustainable balance. The Department must use all the tools at its disposal to promote water efficiency and conservation to help tackle the growing disparity between supply and demand in the Colorado River water system.

Ensuring that Colorado River Lower Basin water is not delivered for unreasonable, wasteful uses is especially important within the agricultural sector. The way in which the Colorado River is allocated is split into two areas: the Upper Basin area (consisting of Colorado, New Mexico, Utah and Wyoming) and the Lower Basin area (Nevada, Arizona and California).[25] Seventy percent of the water diverted from the Colorado River is for agriculture, driven largely by the water consumption of the Lower Basin's agricultural sector.[26] After accounting for the water consumed by the River's surroundings, agriculture consumes 52% of total water deliveries.[27] While we appreciate the importance of the region as a major contributor to our nation's produce supply, we also recognize that many agricultural operations in the Lower Basin have never been required to ensure that they are using water reasonably and not wasting water. Wasteful water practices may include, for example, growing 12 rotations of alfalfa using flood irrigation year-round in regions where ambient temperatures routinely exceed 110 °F. Although most of the alfalfa cultivated in Western states is used to feed local beef and dairy cattle, a growing percentage of that alfalfa is being exported to foreign countries like China and Saudi Arabia.[28] Producing water-intensive crops in 12-crop cycles using flood irrigation in hot, dry

---

[24] Sharon Udasin, *How US-Mexico Collaboration Could Help Stabilize the Drought-Stricken Colorado River Basin*, THE HILL (July 22, 2023), https://thehill.com/policy/equilibrium-sustainability/4112918-usa-mexico-collaboration-could-help-stabilize-drought-stricken-colorado-river-basin/.
[25] BUREAU OF RECLAMATION, *supra* note 13.
[26] *Id.*
[27] Brian D. Richter et al., *New Water Accounting Reveals Why the Colorado River No Longer Reaches the Sea*, COMM. EARTH & ENV'T, 1 (Mar. 28, 2024), https://www.nature.com/articles/s43247-024-01291-0.
[28] Ian James, *Booming Demand for Hay in Asia, Middle East Driving Agribusiness in the California Desert*, DESERT SUN (Sept. 28, 2017), https://www.desertsun.com/story/news/environment/2017/09/28/booming-demand-hay-asia-middle-east-driving-agribusiness-california-desert/702400001/.

areas that are ill-suited for growing such crops is often unreasonable. The export of these water-intensive crops is akin to exporting water itself, a resource that is urgently required domestically. Furthermore, most of the irrigated land in California is either fully or partially irrigated via flood irrigation, which uses much more water than drip and sprinkler irrigation.[29]

As climate change continues to constrain the Colorado River's flows, farmers should be incentivized to move away from especially wasteful irrigation practices and to consider crops (or crop cycles) more appropriate to the climate zone. Farmers are currently not required nor incentivized to use water more efficiently. In fact, the largest Colorado River Lower Basin water user, the Imperial Irrigation District, receives its water at almost no cost from the Bureau, and IID charges growers only $20 for an acre-foot of water.[30] Undervaluing and underpricing water thwarts conservation efforts and significantly contributes to the profitability of growing water-intensive crops using flood irrigation in 12-crop rotations in places like the Imperial Valley and the Palo Verde Irrigation District that routinely experience >110 °F heat.[31]

Likewise, wasteful municipal and industrial water usage too often goes unchecked, despite the Bureau's existing authority to limit its water deliveries where needed to prevent unreasonable uses of water as mandated by Part 417. These wasteful municipal and industrial water uses include, for example, excessive irrigation of non-functional, purely ornamental turf in municipalities that routinely experience extreme heat; inefficient industrial processes that use more water than needed due to outdated evaporative cooling systems; and the continued use of antiquated 5-gallon toilets instead of contemporary 1.28-gallon toilets.[32]

In short, the water levels of the Colorado River are dwindling due to climate change, and this trend is expected to persist and worsen. The Bureau's Directives and Standards acknowledge the "changing water realities due to climate change (including extreme events such as floods and droughts) and population growth."[33] Meanwhile, inefficient agricultural and municipal/industrial practices like those discussed above are contributing to water waste. Unless the Bureau changes

---

[29] Khaled M. Bali, *Improving the Efficiency of Surface Irrigation Systems in California*, UNIVERSITY OF CALIFORNIA KEARNEY AGRICULTURAL RESEARCH AND EXTENSION CENTER, at 3, https://secure.cdfa.ca.gov/egov/waterinag/docs/Khaled_Bali_UC.pdf; *see also, e.g.*, "2024 Palo Verde Irrigation District Part 417 Composite Questionnaire.pdf," produced by the Bureau in response to NRDC's Freedom of Information Act request dated March 4, 2024 (reporting that PVID water users employ "primarily flood irrigation" and, out of approximately 68,000 acres of total irrigated land in PVID, only "2,458 acres" were irrigated by drip/sprinkler irrigation in 2022).

[30] Nat Lash & Janet Wilson, *The 20 Farming Families who Use More Water from the Colorado River than Some States*, DESERT SUN (Nov. 9, 2023), https://www.desertsun.com/story/news/environment/2023/11/09/20-california-farm-families-use-more-colorado-river-water-than-some-states/71156386007/.

[31] *Id.* Indeed, this status quo led to a troublesome proposal in May 2023 when the Imperial Valley requested that the Department of the Interior *buy back* its cheap water at $840 for each acre-foot, for the sum of $700 million. *Id.*

[32] *See* Ed Osann and Linda Escalante, *New Law Marks Climate Transition for California Landscapes*, NRDC (Oct. 23, 2023), https://www.nrdc.org/bio/ed-osann/new-law-marks-climate-transition-california-landscapes ("Governor Gavin Newsom just signed into law a bill that will ban the irrigation of ornamental turf with potable water, effective in stages between 2027 and 2031."); SOUTHERN NEVADA WATER AUTHORITY, *Memorandum of Understanding by and Among Colorado River Basin Municipal and Public Water Providers* (Nov. 15, 2022), https://www.snwa.com/assets/pdf/mou-2022.pdf.

[33] BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Reclamation Manual: Directives and Standards, WTR 13-01 "Basin Studies,"* at 11 (last updated Feb. 20, 2024), https://www.usbr.gov/recman/wtr/wtr13-01.pdf.

its approach to water deliveries in the Lower Basin, the growing disparity between supply and demand will lead to a severe crisis.

III. The Bureau Has the Authority and Mandate Under the Boulder Canyon Project Act and 43 CFR Part 417 to Avoid the Waste and Unreasonable Use of Water Delivered to Colorado River Lower Basin Users

Under existing law, the Bureau is, in effect, the water master for the Colorado River Lower Basin and has broad authority—and a mandate—to ensure that water deliveries to Lower Basin users from the Colorado River are reasonable and will not be used wastefully.[34] The Bureau is also charged specifically, by regulation, with making Lower Basin water deliveries via a process designed to ensure that all water deliveries are "reasonably required for beneficial use."[35] The Bureau can do this while also respecting state law, as required. This section outlines those authorities and duties.

Under the Boulder Canyon Project Act, Congress created "its own comprehensive scheme for the apportionment among California, Arizona, and Nevada of the Lower Basin's share of the mainstream waters of the Colorado River."[36] In *Arizona v. California,* the Supreme Court recognized that Congress has given the Secretary broad contracting powers: "the Secretary is vested with considerable control over the apportionment of Colorado River waters."[37] This contracting authority allows for a meaningful consideration of the reasonableness of water deliveries. Congress directed the Secretary to choose with whom and upon what terms water contracts will be made, including those with terms that prohibit the waste of water.[38] Using this power, the Bureau can assess and require water conservation methods. This power is further reflected in the regulation implementing Lower Basin water deliveries, which lists factors that the Bureau is explicitly directed to consider, including several factors that relate to conservation.[39]

In times of water shortage, the Secretary's power to determine management strategies is especially robust. The Secretary is not obligated to follow a particular formula for apportioning water in times of drought; instead, he or she is "free to choose among the recognized methods of apportionment or to devise reasonable methods of his [or her] own."[40]

Existing regulations already recognize these powers and require the Bureau to undertake a meaningful process aimed at avoiding wasteful uses of water. A regulation governing the decisionmaking process for Lower Basin water deliveries, 43 CFR § 417.2, requires the Bureau to employ a consultation process designed to the end that deliveries to each contractor do not exceed "those reasonably required for beneficial use." This language gives the Bureau a mandate to limit water deliveries to those reasonably required, and to prevent waste.

---

[34] *See Arizona v. California*, 373 U.S 546, 580–596 (1963); 43 CFR § 417.3 (2024).
[35] 43 CFR § 417.3 (2024).
[36] *Arizona v. California*, 373 U.S. at 580.
[37] *Id.* at 593.
[38] *Id.* at 580.
[39] 43 CFR § 417.3 (2024).
[40] *California v. United States.*, 438 U.S. 645, 676 (1978).

In even more prescriptive language, 43 CFR § 417.3 requires that the Bureau's "determinations *shall*, with respect to each Contractor, *be based upon*" a non-exhaustive list of fourteen factors:

- The area to be irrigated
- Climatic conditions
- Location
- Land classifications
- The kinds of crops raised
- Cropping practices
- The type of irrigation system in use
- The condition of water carriage and distribution facilities
- Record of water orders
- Rejections of ordered water
- General operating practices
- The operating efficiencies and methods of irrigation of the water users
- Amount and rate of return flows to the river
- Municipal water requirements and the pertinent provisions of the Contractor's Boulder Canyon Project Act water delivery contract

Notably, these fourteen required factors—upon which the Bureau's decisions "shall . . . be based"—relate to the goals of water conservation and reasonable use (e.g., the "operating efficiencies and methods of irrigation of the water users," the "kinds of crop raised," the "type of irrigation system in use," and the "condition of water carriage and distribution facilities"). Additionally, § 417.3 makes clear that the Bureau has the authority to consider factors beyond those on the list, including those that likewise concern water conservation goals. As we discuss in Section IV below, however, despite these tools and mandates, the Bureau is currently failing to ensure that water is delivered only for reasonable uses and not wasted.

Federal government attorneys representing the Bureau in district court have acknowledged that Part 417, which was "promulgated pursuant to federal law: the BCPA and the 1964 decree in *Arizona v. California*, 376 U.S. 340 (1964)," requires the Bureau to ensure that its water deliveries are being put to "reasonable and beneficial use" as opposed to just "beneficial use"—creating a dual-pronged test.[41] When describing the conditions of the Bureau's water deliveries to the Imperial Irrigation District (IID), the Bureau's attorneys stated:

> "IID's 1932 water delivery contract with the Secretary is a contract in which BOR agrees to construct the All-American Canal, IID agrees to repay the cost of construction, and the Secretary agrees to deliver water [] from Hoover Dam to Imperial Dam for beneficial

[41] Federal Defendants' Response to Supplemental Briefs on Remedy, *Imperial Irrigation Dist. v. United States*, 2003 WL 24255529, No. 03-CV-0069W (JFS) (S.D. Cal. Mar. 18, 2003), at 9–10, available at https://shorturl.at/CQgb9.

consumptive use within IID in amounts reasonably required for potable and irrigation purposes. The United States gets nothing out of this contract beyond performing the duties of river management as explicitly delegated by Congress. IID gets water, *but only in amounts which IID might put to reasonable and beneficial use, as required by federal law*."[42]

The Bureau explicitly recognized that Part 417 required the Bureau to impose a higher standard—that is, the standard of *reasonable* use—on water districts, in addition to the less-exacting requirement that water deliveries be put to *beneficial* use:

> "[T]he question of the allocation of Colorado River water to water users in the Lower Basin—here, specifically, the question of how much water is to be allocated to IID in 2003 to meet its reasonable and beneficial use needs under its 1932 water delivery contract with the Secretary—is a question firmly committed under applicable federal law to the Secretary. The Secretary adopted the Part 417 regulations to carry out Interior's responsibilities under the Boulder Canyon Project Act to ensure that 'deliveries of Colorado River water to each Contractor will not exceed those reasonably required for beneficial use under the respective Boulder Canyon Project Act contract or other authorization for use of Colorado River water.' 43 C.F.R. § 417.2. U.S. Brief at 10-11. State law standards for reasonable and beneficial use do not and cannot displace federal standards set forth in Part 417 for management of the Colorado River."[43]

Part 417's requirement that water delivered by the Bureau be "reasonably required for beneficial use" applies to *all* water deliveries, including those made pursuant to present perfected rights (PPRs) like those recognized in *Arizona v. California*, 376 U.S. 340 (1964). Attorneys representing the federal government in federal court have acknowledged that any individual water district like "IID gets water, but only in amounts which IID might put to reasonable and beneficial use, as required by federal law," without any mention of an exception for water deliveries made pursuant to PPRs.[44] Those attorneys recognized the district court's holding that

---

[42] *Id.* at 10 (emphasis altered).

[43] *Id.* at 13; *see generally* Jerome C. Muys, *Section 5 of the Boulder Canyon Project Act and 43 C.F.R. Part 417 Occupy the Field of Determination of Reasonable Beneficial Use of Lower Colorado River Water*, 15 HASTINGS WEST NORTHWEST J. OF ENVTL. L. & POL'Y 197 (2009), https://repository.uclawsf.edu/cgi/viewcontent.cgi?article=1195&context=hastings_environmental_law_journal (asserting that "*Arizona v. California* should be read as holding that section 5 of the BCPA 'occupied the field' of establishing and enforcing the terms and conditions of the Secretarial contracts making the interstate and intrastate allocations and entitlements of Lower Colorado River mainstream water to Arizona, California, and Nevada and their water users" and that Part 417's requirements of both reasonable use and beneficial use "are a valid exercise of that authority").

[44] Federal Defendants' Response to Supplemental Briefs on Remedy, *Imperial Irrigation Dist. v. United States*, 2003 WL 24255529, No. 03-CV-0069W (JFS) (S.D. Cal. Mar. 18, 2003), at 9–10, 13, available at https://shorturl.at/CQgb9.

Part 417 applies to *all* of IID's water deliveries, including those made pursuant to PPRs.[45] The district court's holding is unremarkable given that, dating back to the 1922 Colorado River Compact, PPRs have been defined as conferring rights that are limited in scope—for example, granting rights only "to the beneficial use of water" as opposed to unlimited right to use and to waste water however they see fit.[46]

In short, by the Bureau's own admission in federal court, the Bureau has a mandate under the Boulder Canyon Project Act and Part 417 to ensure that all of its water deliveries to Lower Basin users from the Colorado River are "reasonably required for beneficial use."

IV. The Bureau Is Failing to Meet Its Duty to Effectively Prevent Wasteful and Unreasonable Water Use Under 43 CFR Part 417

As discussed above, under 43 CFR Part 417 and the Boulder Canyon Project Act, the Bureau of Reclamation is required to take meaningful steps designed to ensure that it does not deliver water for unreasonable uses to the Lower Basin. Despite this authority and obligation, the Bureau's process does not, in fact, provide any serious check on unreasonable uses of water. The Bureau is failing to ensure that water deliveries do not surpass what is reasonably required for beneficial use.

The Bureau is failing to ensure that water is being delivered only for reasonable uses for at least three interrelated reasons: (1) the Bureau has failed to define the term "reasonably required for beneficial use" in a way that gives the term meaning; (2) the Bureau appears to undertake its water delivery process under Part 417 without seriously considering factors critical to ensuring that water is not delivered for unreasonable uses; and (3) these process failures have led to the predictable result that the Bureau's water deliveries in the Lower Basin are very often not, in fact, reasonable.

First, the Bureau is failing to ensure that water is being delivered only for reasonable uses by not defining the term "reasonably required for beneficial use" in a way that gives the term substantive meaning. Following a comprehensive analysis of the water approval letters available on the Bureau's website and the documents produced by the Bureau in response to NRDC's Freedom of Information Act requests dated March 4, 2024, and March 13, 2024, we found no evidence that the Bureau has defined reasonable use, or that the Bureau considers this concept to be a serious constraint in its water delivery decisions.[47] Nor did we find evidence to suggest that

---

[45] Federal Defendants' Brief Regarding Remedy for 43 C.F.R. Part 417 Breach Found by Court on Motion for Preliminary Injunction, *Imperial Irrigation Dist. v. United States*, 2003 WL 24255529, No. 03-CV-00069 (JFS) (S.D. Cal. Mar. 18 2003), at 4–5, available at https://shorturl.at/hGQXZ (recognizing that the district court held "(1) that IID's entitlement is limited to the amount needed for beneficial consumptive use; (2) that the proper mechanism for determining IID's beneficial consumptive use is the Part 417 process; and (3) that the Federal Defendants must proceed under federal law to follow Part 417's expressly stated procedures, including applying the factors contained in Part 417 and specifying the basis and pertinent factual determinations for any beneficial use limitation").

[46] Colorado River Compact, art. VIII (Nov. 24, 1922), https://www.usbr.gov/lc/region/pao/pdfiles/crcompct.pdf.

[47] *See, e.g.*, Letter from Jacklynn Gould, Reg'l Dir. of the Lower Colorado Basin Office, to Patrick Martinez, City Manager of the City of Needles (2023) (on file with the U.S Dep't of Interior, Bureau of Reclamation); Letter from Jacklynn Gould, Reg'l Dir. of the Lower Colorado Basin Office, to the Metro. Water Dist. (2023) (on file with the

the Bureau requires water districts to consider what qualifies as a reasonable use of water when making their water requests.[48] Furthermore, there is no indication that the Bureau includes any definitions of "reasonable use" or "reasonably required for beneficial use" in its internal or externally available guidelines.

Second, the Bureau is not meeting its obligation to ensure that water is being delivered only for reasonable uses because it undertakes its Part 417 consultation duties without seriously grappling with factors critical to preventing unreasonable uses of water. The Bureau does ask about some factors that may affect reasonable use in its Part 417 questionnaire.[49] But based on a review of available information, Lower Basin water users typically do not provide robust answers to these questions and are not required to do so. For example, the Coachella Valley Water District's most recent completed questionnaire provides only cursory answers to these questions and fails to answer some of them entirely.[50] It therefore does not appear that the Regional Director considers crucial factors, or even the answers received, aimed at preventing unreasonable water usage when making water delivery decisions. In explaining water delivery decisions, water delivery approval letters typically do not mention the factors "based upon" which the Bureau "shall" make water delivery determinations per 43 CFR § 417.3, such as land classifications, types of crops grown, irrigation methods, and operating efficiencies of water users, nor do they explain how these factors are weighed in the decision-making process.[51] The Bureau's neglect of the § 417.3 factors violates its obligations as articulated by a federal district court, which held that the Bureau must "*meticulously* follow Part 417's prescribed procedures in determining [a water district]'s reasonable beneficial use."[52] The water delivery approval letters also fail to recognize that what is considered a "reasonable use" of water may differ year-to-year based on changing climatic conditions, as former Secretary of the Interior Bruce Babbitt emphasized in a 2023 op-ed exhorting the Bureau to enforce Part 417's mandate that all water

---

U.S Dep't of Interior, Bureau of Reclamation); Letter from Jacklynn Gould, Reg'l Dir. of the Lower Colorado Basin Office, to the Palo Verde Irrigation Dist. (2023) (on file with the U.S Dep't of Interior, Bureau of Reclamation); Letter from Jacklynn Gould, Reg'l Dir. of the Lower Colorado Basin Office, to Nick Bahr, Gen. Manager of the Bard Water Dist. (2023) (on file with the U.S Dep't of Interior, Bureau of Reclamation); Letter from Jacklynn Gould, Reg'l Dir. of the Lower Colorado Basin Office, to Jamie Asbury, Gen. Manager to the Imperial Irrigation Dist. (2023) (on file with the U.S Dep't of Interior, Bureau of Reclamation); and Letter from Jacklynn Gould, Reg'l Dir. of the Lower Colorado Basin Office, to James M. Barrett, Gen. Manager of the Coachella Valley Dist. (2023) (on file with the U.S Dep't of Interior, Bureau of Reclamation).

[48] *Id.*

[49] *Id.* (seeking information on the area of irrigated land, the location of irrigated land, the soil classification of irrigated lands, the types of irrigation systems in use, irrigation water management techniques, water use efficiency (total deliveries divided by total diversions), the location of water carriage and drainage facilities, crops, water ordered but not diverted, municipal water requirements, and water conservation measures).

[50] *Id.*

[51] *Id.*

[52] Order Remanding Action, *Imperial Irrigation Dist. v. United States*, 2003 WL 24255529, No. 03-CV-0069W (JFS) (S.D. Cal. Apr. 16, 2003), at 3, available at https://web.archive.org/web/20030911163951/http://iid.com/pressbox/pdf/04-18-03_order.pdf ("Should the Federal Defendants fail to *meticulously* follow Part 417's prescribed procedures in determining IID's reasonable beneficial use, Plaintiff may again elect to bring the matter before a district court for judicial review.").

deliveries be "reasonably required for beneficial use" *each year* given that ordinarily-reasonable uses of water may become unreasonable during water shortages.[53]

Predictably, these process failures have resulted in the Bureau's water deliveries to the Lower Basin often being unreasonable. The Bureau's Regional Director appears never to significantly diminish water delivery requests when making water delivery decisions, nor does the Regional Director discuss or appear to rely on water usage and efficiency information when making decisions under 43 C.F.R § 417.3. It appears that the Regional Director treats the Part 417 review process like an accounting exercise instead of evaluating how the water is being used and determining whether it is being used reasonably. As a result, agricultural water districts are allowed to provide water to farmers engaging in patently unreasonable uses of water, such as farmers engaging in wasteful flood irrigation practices during >110 °F summers to grow water-intensive crops like alfalfa and grass hay in 12-crop rotations.[54] Unreasonable use in non-agricultural contexts may include wasteful landscaping practices like, for example, excessive irrigation of non-functional, purely ornamental turf, especially during extended periods of extreme heat.[55] As long as water deliveries remain ungrounded in "reasonable use," Lower Basin water users will have little reason or incentive for adopting less wasteful practices. The Bureau has not confronted unreasonable uses of water despite recognizing that the Colorado River water supply is increasingly constrained and further threatened by climate change. In numerous call letters, the Bureau acknowledged that the Colorado River was operating under a shortage condition, then immediately reassured districts in Southern California that their water deliveries would not be reduced and that no contributions would be required of them per the 2019 Lower Basin Drought Contingency Plan Agreement.[56] In other words, the Bureau apprehends the problem of the Colorado River water shortage, but then—by word and by deed—disclaims interest in pursuing a readily-available and legally-authorized solution to that problem: following Part 417's mandate to ensure that all water deliveries are "reasonably required for beneficial use."

Overall, even though 43 CFR Part 417 and the Boulder Canyon Project Act require the Bureau to engage in a procedurally robust process to evaluate Lower Basin water users and ensure that water is delivered only for reasonable uses, the Bureau is failing to meet this

---

[53] Bruce Babbitt, *Department of Interior Needs to Review Agricultural Use of Water Amid Negotiations for Colorado River Cuts*, NEV. INDEP. (Jan. 11, 2023), https://thenevadaindependent.com/article/department-of-interior-needs-to-review-agricultural-use-of-water-amid-negotiations-for-colorado-river-cuts ("A federal regulation, known as Section 417, gives the department authority to limit agricultural water deliveries to that amount 'reasonably required for beneficial use.' What is reasonably required is a judgment that can take into account many factors, including the needs of cities, towns, power plants, mineral extraction, recreation, and more. And what is reasonable for irrigation allocations in normal years may be entirely unreasonable when Hoover Dam, Glen Canyon Dam and the entire Colorado River system are at risk of collapse.").

[54] Richter et al., *supra* note 27; Jessica Fu, *It's the Thirstiest Crop in the US South-West. Will the Drought Put Alfalfa Farmers Out of Business?*, THE GUARDIAN (Sept. 12, 2022), https://www.theguardian.com/environment/2022/sep/12/colorado-drought-water-alfalfa-farmers-conservation.

[55] *See* Osann et al., *supra* note 32 ("Governor Gavin Newsom just signed into law a bill that will ban the irrigation of ornamental turf with potable water, effective in stages between 2027 and 2031.").

[56] *See, e.g.*, "01 2024 City of Needles Call Letter Signed JDodds.pdf"; "01 - 2023 Bard Call Letter - SIGNED 9-16-22.pdf"; and "01 2024 PVID Call Letter Signed JDodds.pdf," produced by the Bureau in response to NRDC's Freedom of Information Act request dated March 4, 2024.

requirement. The following section explores how the Bureau could opt to exercise its Part 417 authority to formulate a process that more thoroughly and substantially evaluates and ensures the reasonableness of Colorado River water usage.

V. The Bureau Must Revise Its Lower Basin Water Delivery Process to Prevent Unreasonable Uses of Water

First and foremost, we call on the Bureau to abide by the legal mandates of Part 417. In doing so, we urge the Bureau of Reclamation to reform its process of evaluating water users pursuant to Part 417's mandate to ensure that all of the Bureau's water deliveries to Colorado River Lower Basin users are reasonably required for beneficial uses and are not delivered for uses that are unreasonable. In the following section, we suggest ways in which the Bureau can establish clear criteria for defining "reasonably required for beneficial use." The Bureau must significantly shift how it implements Part 417, emphasizing the importance of ensuring that water deliveries are limited to reasonable usage levels. By advocating for these reforms, this petition seeks to promote fairness, efficiency, and sustainability in water delivery practices within the Lower Basin.

There are a few basic steps that the Bureau can and should take to advance these goals and satisfy the requirements of Part 417. First, the Bureau should undertake a transparent process with stakeholder input to define the phrase "reasonably required for beneficial use," so that that phrase can better guide water delivery decisions and constrain unreasonable uses. Second, the Bureau should develop a more robust, consistent, and transparent process for determining whether Lower Basin water users are adequately avoiding wasteful, unreasonable uses of water in compliance with Part 417, which should account for factors such as climatic zones, evapotranspiration rates, type of irrigation, type of crop, and water access for all people in the Lower Basin states. And third, the Bureau should undertake required periodic reviews of Lower Basin water users to ensure that delivered water is, in fact, being used reasonably.

In its efforts to define and ensure the reasonableness of its water deliveries, the Bureau could draw from a number of principles and analyses related to the reasonable use concept. We discuss a few useful examples here. At bottom, the Bureau will need to set parameters about what constitutes reasonable use, and may find it worthwhile to take the following into consideration before doing so:

- The use of cost-effective technologies currently available to make agricultural water uses more efficient, such as weather-based and deficit irrigation scheduling; water distribution systems that can supply water to farmers on-demand; and improved irrigation methods, such as substituting drip and sprinkler irrigation in for flood irrigation.[57]

[57] For a discussion of these and other key principles of reasonable use, see Craig M. Wilson, *The Reasonable Use Doctrine & Agricultural Water Use Efficiency: A Report to the State Water Resources Control Board and the Delta Stewardship Council*, CAL. STATE WATER RES. CONTROL BD. (2011), at 3, https://www.waterboards.ca.gov/board_info/agendas/2011/jan/011911_12_reasonableusedoctrine_v010611.pdf.

- The use of evapotranspiration (ET) data to fine-tune irrigation scheduling and help avoid wasteful overwatering.[58] The Bureau should consider defining reasonable use in light of the availability of ET data to boost crop health and productivity, to prepare for drought, mitigate water stress, and raise the level of agricultural precision.[59]
- Crop choice. The growth of water-intensive crops in areas with scarce water resources may become increasingly difficult and unreasonable as water supplies become even more stretched. The Bureau should consider defining reasonable use with reference to crops appropriate to the region, and with reference to the U.S. Department of Agriculture's Plant Hardiness Zone Map.[60]
- Ensuring community access to water. Throughout the Lower Basin, some communities still lack access to safe water resources. Access to clean and sufficient water is a fundamental human right and essential for various aspects of life, including health, sanitation, and economic opportunities.[61] Water resource challenges impact every community nationwide, especially those already grappling with economic, environmental, and health issues.[62] Particularly vulnerable are lower-income individuals, communities of color, children, and the elderly.[63] The Bureau can better ensure water availability and sustainable development of all citizens.
- The other potential beneficial uses of conserved water, such as the importance of maintaining in-stream flows sufficient to sustain functional and healthy ecosystems.

In thinking through how to apply these principles to Lower Basin water users, the Bureau may find instructive one proposed model that takes a three-pronged approach to ensuring reasonable and beneficial use by: 1) applying efficiency standards to the Bureau's review of requests for water deliveries that have yet to receive the Bureau's approval, 2) seeking efficiency improvements from all water users, and 3) aggressively enforcing against waste.[64] Under the first prong, the Bureau may choose to make water users seeking the Bureau's approval of their requests for water deliveries meet a standard of "best practicable conservation technology" (e.g., drip and sprinkler irrigation, evapotranspiration meters, etc.) and the best practicable water use

---

[58] Vasyl Cherlinka, *Evapotranspiration Process and Methods of Measuring*, EOS DATA ANALYTICS (Aug. 25, 2023), https://eos.com/blog/evapotranspiration.
[59] *Id.*
[60] AGRICULTURAL RESEARCH SERVICE, U.S. DEP'T OF AGRIC., *2023 USDA Plant Hardiness Zone Map*, https://planthardiness.ars.usda.gov/.
[61] UN WATER, UNITED NATIONS, *Human Rights to Water and Sanitation*, https://www.unwater.org/water-facts/human-rights-water-and-sanitation; *see also* CALIFORNIA DEPARTMENT OF WATER RESOURCES, *Human Right to Water*, https://water.ca.gov/Programs/All-Programs/Human-Right-to-Water.
[62] U.S. WATER ALLIANCE, *Water Equity Taskforce: Insights for the Water Sector* (2021), https://waterfdn.org/wp-content/uploads/2021/08/USWA-Water-Equity-Taskforce-Insights-for-the-Water-Sector-June-2021.pdf.
[63] *Id.*
[64] *See* Janet C. Neuman, *Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use*, 28 ENVTL. L. 919, 947–48 (1998).

practices, thus requiring them to accomplish their proposed water use with a minimum amount of water.[65] Under the second prong, the Bureau may require water users to adopt technological improvements or to otherwise achieve water use reduction targets and perform water supply conservation planning.[66] The Bureau's own informal guidance has already identified types of water conservation programs that are worthy of incentivizing via federal grants; the Bureau should consider whether districts have implemented these programs—which are self-reported by the districts in their Part 417 consultation questionnaires—when determining annual water deliveries based on whether the districts are putting their water deliveries to reasonable and beneficial use.[67] Under the third prong, the Bureau may implement measuring and monitoring procedures that would require each water user to utilize meters to measure the amount of water taken.[68] Alongside this effort, the Bureau would set parameters about what constitutes reasonable use and send officials to use these parameters to monitor waste and unreasonable use in the field.[69] In defining and differentiating among "reasonable" and "unreasonable" uses, the Bureau may describe waste by reference to water use targets based on geography, crop, climatic conditions, and the like, as well as identify specific water use practices as wasteful.[70] Alternatively, the Bureau could adopt or draw from the seven factors that the California State Water Resources Control Board uses to determine whether a beneficial use is reasonable, or draw from best practices adopted at the state level by any of the Colorado River Basin states.[71]

There are countless benefits—ranging from economic to ecological to public policy-advancing in nature—that would accrue from these proposed reforms. First and foremost, the reforms would serve to protect the long-term viability of the Colorado River as a primary source of water across the western U.S., which is especially critical as these areas experience the effects of climate change-induced floods and droughts.[72] These vital interests are at the core of the

---

[65] *Id.* at 982.
[66] *Id.*
[67] BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, *Reclamation Manual: Directives and Standards, WTR 12-01 "WaterSMART Grants,"* at 4 (Aug. 14, 2013), https://www.usbr.gov/recman/wtr/wtr12-01.pdf (identifying as grant-eligible programs "to increase water use efficiency; to facilitate water markets; to enhance water management, including increasing the use of renewable energy in the management and delivery of water; to accelerate the adoption and use of advanced water treatment technologies; to address concerns with threatened or endangered species, designated critical habitat, or recognized candidate species under the ESA as relates to improved water management; to carry out any other activity to prevent water-related crisis or conflict at any watershed that has a nexus to a Federal Reclamation project located in a service area; or to address any climate-related impact to the water supply of the United States that increases ecological resiliency to the impacts of climate change.")
[68] Neuman, *supra* note 64, at 986.
[69] *Id.* at 986–87.
[70] *Id.*
[71] *See, e.g.*, Alleged Waste and Unreasonable Use of Water by Imperial Irrigation District, Water Rights Decision 1600, Cal. State Water Res. Control Bd. (1984), at 24–28. Those factors are: (1) other potential beneficial uses for conserved water; (2) whether the excess water serves a reasonable and beneficial purpose; (3) probable benefits of water savings; (4) the amount of water reasonably required for current use; (5) the amount and reasonableness of the cost of saving water; (6) whether the required methods of saving water are conventional and reasonable rather than extraordinary; and (7) the availability of a physical plan or solution. Not all of these factors apply to each water use inspection, and their balancing need not be equal in every case.
[72] CALIFORNIA NATURAL RESOURCES AGENCY, *California's Water Supply Strategy: Adapting to a Hotter, Drier Future*, (Aug. 2022), at 2, https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Water-Resilience/CA-Water-Supply-Strategy.pdf. The Bureau has recognized the harmful effects of climate change in the Lower Basin

Bureau's mission, and safeguarding them becomes more crucial as extreme events become more common and cause uncertainty about the water supply for users—both urban and agricultural—suffering from wildfires, dust storms, and increased concentrations of harmful pollutants in freshwater resources like rivers and streams.[73]

Moreover, these reforms would serve to decrease the likelihood of the River reaching dangerously low levels that would hamper the operation of electric generators that provide power to approximately five million people across seven states or, at worst, result in a "dead pool" in which water can no longer successfully flow downstream, cutting off countless communities and ecosystems that rely on Colorado River water for their survival.[74]

Adopting these reforms would also mitigate the risks of declining River water levels to the Lower Basin's endemic flora and fauna. By abiding by Part 417's legal mandates, the Bureau will avoid backsliding on meaningful progress made by the federal government in protecting the Lower Basin's wildlife and biodiversity.

For all of these reasons, the reforms proposed above are both *urgently needed* in light of the harsh realities of climate change, as recognized by the Bureau, and *legally mandated* per Part 417's provision requiring the Bureau to ensure that all of its water deliveries to Colorado River Lower Basin users are reasonably required for beneficial uses and are not delivered for uses that are unreasonable.

VI. Conclusion

In conclusion, the Colorado River, a lifeline for millions in the Southwest, faces unprecedented challenges due to shortages and worsening drought conditions exacerbated by climate change. Despite the Bureau's broad authority and mandate under the Boulder Canyon Project Act and 43 CFR Part 417 to regulate water usage and delivery, the Bureau's current approach falls well short, lacks transparency, and fails to adequately ensure water usage efficiency. It is imperative that the Bureau take action to reform its process for evaluating Lower Basin water users as required by Part 417. By ensuring water deliveries are "reasonably required for beneficial use" and not delivered for wasteful, unreasonable uses, the Bureau can promote sustainability and access to this vital resource for all. Transparency, rigorous assessment, and consideration of the § 417.3 factors are essential in addressing the current shortcomings and

---

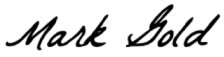
openly and forthrightly in the Lower Basin Drought Contingency Plan Agreement, declaring that "entities that rely on the Colorado River as a water source face increased individual and collective risk of temporary or prolonged interruptions in water supplies, with associated adverse impacts on the society, environment and economy of the southwestern United States." BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *Lower Basin Drought Contingency Plan Agreement* (2019), https://www.usbr.gov/ColoradoRiverBasin/documents/dcp/final/Attachment-B-LB-DCP-Agreement-Final.pdf; *see* Bradley Udall & Jonathan Overpeck, *The Twenty-First Century Colorado River Hot Drought and Implications for the Future*, 53 WATER RESOURCE RES. 2404 (2017), https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2016WR019638.

[73] Josie Garthwaite, *The Effects of Climate Change on Water Shortages*, STANFORD DOERR SCHOOL OF SUSTAINABILITY (Mar. 22, 2019), https://sustainability.stanford.edu/news/effects-climate-change-water-shortages.

[74] John C. Schmidt et al., *The Colorado River Water Crisis: Its Origin and the Future*, WIREs WATER (June 17, 2023), https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wat2.1672.

mitigating the impacts of water scarcity. It is critical that steps are taken promptly to safeguard the future of the Colorado River and the communities that rely on it.

Respectfully submitted,



Dr. Mark Gold
Director, Water Scarcity Solutions, Environmental Health
Natural Resources Defense Council
1314 2nd St, Santa Monica, CA 90401
(310) 434-2300
mgold@nrdc.org