



December 20, 2022

Reclamation 2007 Interim Guidelines SEIS Project Manager  
Upper Colorado Region  
125 South State Street, Suite 8100  
Salt Lake City, Utah 84138  
[CRinterimops@usbr.gov](mailto:CRinterimops@usbr.gov)

*Sent via email*

RE: Notice of Intent to Prepare a Supplemental Environmental Impact Statement for December 2007 Record of Decision Entitled Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead dated November 17, 2022 (87 Fed. Reg. 69042)

Dear SEIS Project Manager,

The Grand Canyon Trust (“Trust”) submits this letter to provide scoping comments on the U.S. Bureau of Reclamation’s proposal to revise the existing *December 2007 Record of Decision for the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead* (“2007 Interim Guidelines”) and prepare a Supplemental Environmental Impact Statement (“SEIS”).

The Grand Canyon Trust is a 501(c)(3) non-profit advocacy organization founded in 1985 with a mission to safeguard the wonders of the Grand Canyon and the Colorado Plateau, while supporting the rights of its Native peoples. We are headquartered in Flagstaff, Arizona and have more than 3,000 members and supporters. For decades, we have worked across the four corners region to secure protections for important cultural landscapes, safeguard water from uranium mining pollution, defend the unsustainable withdrawal of groundwater for development, protect the Grand Canyon ecosystem, and restore healthy forests and springs. We appreciate the opportunity to comment on the proposed revisions to the operating guidelines for Lake Powell and Lake Mead and we look forward to working with you and other partners to improve and sustain the quality of life and healthy environment for all communities in the Colorado River Basin.

The Secretary of the Interior directed this action after concluding that “the existing operating guidelines are insufficient given current hydrology and reservoir conditions and in light of plausible low runoff conditions in the Colorado River Basin over the next four years.” (87 Fed. Reg. 69042). Reclamation predicts that Lake Powell could drop below the elevation 3,490 feet by summer of 2023, resulting in the inability of the dam to generate power and to use the

hydropower penstocks (intakes) to release water downstream.<sup>1</sup> Reclamation also cautions that due to uncertainty regarding operation of the river outlet works infrastructure below elevation 3,490 feet, flows downstream (even at this level) may be significantly reduced or prove impossible to pass beyond the dam. *Id.* Even more grim, Reclamation reiterated “that without appropriate responsive actions and under a continuation of recent hydrologic trends, major Colorado River reservoirs could continue to decline to ‘dead pool’—elevations at which water cannot be regularly released from a reservoir—in coming years.” (87 Fed. Reg. at 69403).

The Trust is deeply concerned about the dire situation on the Colorado River and appreciates this and additional actions Interior and others have taken and plan to take in hopes of stabilizing reservoir levels and sustaining the Colorado River. There is much more work to be done. For context, in 1999, the combined storage of Lake Powell and Lake Mead was 47.6 million acre feet or 92 percent of combined capacity. Lake Powell was at elevation 3,681 feet. Since that time, storage has decreased by 34.5 million acre feet, leaving the combined storage of the reservoirs at 13.1 million acre feet or 26 percent of capacity. Lake Powell is currently at elevation 3526 feet.<sup>2</sup> While the continued below average flows in the Colorado River is a factor in this crisis, demand in the basin has outpaced supply for decades and significantly reducing that demand is ultimately the solution for recovering storage in Lake Powell and Lake Mead and moving toward a more just and sustainable river system for all.<sup>3</sup>

As Reclamation implored, the stakes could not be higher to find a solution to the crisis facing the Colorado River and recognizes “[t]he Colorado River Basin provides essential water supplies to approximately 40 million people, nearly 5.5 million acres of agricultural lands, and habitat for ecological resources across the Southwestern United States and Northwestern Mexico.” (87 Fed. Reg. at 69043). However, in addition to the services and benefits the Colorado River provides to communities throughout the western United States, it also has its own intrinsic value as a river—a waterway with ecological, spiritual, and cultural significance since time immemorial. This is no more evident than where the Colorado River flows through Grand Canyon National Park.

The Grand Canyon is not just recognized locally, regionally, and nationally, but was designated by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as a World Heritage Site in 1979<sup>4</sup>. The Grand Canyon is described by UNESCO as

among the earth’s greatest on-going geological spectacles. Its vastness is stunning, and the evidence it reveals about the earth’s history is invaluable. The 1.5-kilometer (0.9 mile) deep gorge ranges in width from 500 m to 30 km (0.3 mile to 18.6 miles). It twists and turns 445 km (276.5 miles) and was formed during 6 million years of geological activity and erosion by the Colorado River on

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<sup>1</sup> See Lake Powell End-of-Month Elevations, Slides 2007 Interim Guidelines SEIS Public Informational Webinars, November 29 and December 2, 2022.

[https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/2007InterimGuidelinesSEIS\\_ScopingWebinarPresentation.pdf](https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/2007InterimGuidelinesSEIS_ScopingWebinarPresentation.pdf)

<sup>2</sup> Elevation 3,525 feet (5.5 million acre feet) is the target elevation under the Drought Response Operations Agreement, which is the level water managers are trying to keep the reservoir above. This elevation provides a 35-foot buffer above the minimum power pool elevation of 3,490 feet.

<sup>3</sup> “Reservoir levels of both Lake Powell and Lake Mead will likely continue to decline regardless of where water is stored unless consumptive use is limited, so limiting consumptive use may provide the most flexibility in managing ecosystem drivers.” (Bruckerhoff, et al. 2021 at 16).

<sup>4</sup> Grand Canyon National Park, UNESCO World Heritage Site: <https://whc.unesco.org/en/list/75/>

the upraised earth's crust. The buttes, spires, mesas and temples in the canyon are in fact mountains looked down upon from the rims. Horizontal strata exposed in the canyon retrace geological history over 2 billion years and represent the four major geologic eras.

“To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria.”<sup>5</sup> The Grand Canyon meets four of the criteria including:

Criterion (vii): Widely known for its exceptional natural beauty and considered one of the world's most visually powerful landscapes, the Grand Canyon is celebrated for its plunging depths; temple-like buttes; and vast, multihued, labyrinthine topography. Scenic wonders within park boundaries include high plateaus, plains, deserts, forests, cinder cones, lava flows, streams, waterfalls, and one of America's great whitewater rivers.

Criterion (viii): Within park boundaries, the geologic record spans all four eras of the earth's evolutionary history, from the Precambrian to the Cenozoic. The Precambrian and Paleozoic portions of this record are particularly well exposed in canyon walls and include a rich fossil assemblage. Numerous caves shelter fossils and animal remains that extend the paleontological record into the Pleistocene.

Criterion (ix): Grand Canyon is an exceptional example of biological environments at different elevations that evolved as the river cut deeper portraying five of North America's seven life zones within canyon walls. Flora and fauna species overlap in many of the zones and are found throughout the canyon.

Criterion (x): The park's diverse topography has resulted in equally diverse ecosystems. The five life zones within the canyon are represented in a remarkably small geographic area. Grand Canyon National Park is an ecological refuge, with relatively undisturbed remnants of dwindling ecosystems (such as boreal forest and desert riparian communities), and numerous endemic, rare or endangered plant and animal species.

It should go without saying that water flowing into and through the Grand Canyon in the Colorado River is integral to the health of the landscape and the Native peoples that have deep spiritual and cultural connections to the land and water in and around the canyon.

There is a real possibility that water will not be able to flow past Glen Canyon Dam and into the Colorado River in the coming years. To put this into perspective, “[o]f the total [water] delivered to Lake Mead by the Colorado River, ~92% was released from the Glen Canyon Dam or seep around the dam, and 8% came from tributaries and springs within the Grand Canyon or from the Paria or Little Colorado Rivers.”<sup>6</sup> Seepage around the dam may continue even after water has stopped flowing through the dam, which accounts for about 150,000 acre feet per year of water or 1.7% of the average annual release from Lake Powell.<sup>7</sup> Therefore, without contributions from

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<sup>5</sup> See <https://whc.unesco.org/en/criteria/>.

<sup>6</sup> Wang and Schmidt 2020 at 13.

<sup>7</sup> *Id.* at 8.

upstream of Glen Canyon Dam, the Colorado River in the Grand Canyon will be left with less than 10 percent of the water it normally would carry. Thus, unless significant water savings are realized to the system by reducing water use by at least 2 to 4 million acre feet (Nevada estimates 6 million acre feet), water will cease flowing into the Grand Canyon before the 2007 Interim Guidelines expire in 2026. Such conditions pose serious threats to the Grand Canyon ecosystem, the interests of tribes in developing water security for their homelands, and ultimately the sustainability of the Colorado River and all the life that it supports in seven states, two countries, and thirty tribal nations.

The Trust details its comments below:

## **I. The Scope of Analysis of SEIS Must be Expanded**

### ***A. Reclamation must act to honor values not historically recognized.***

We understand that swift and decisive action and leadership by Reclamation is needed to ensure that the Colorado River system does not collapse. However, we caution that short-term urgency and a narrow-tailored action may ultimately inhibit the agency's ability to honor its commitment to inclusion in resolving the issues before us, and to ensure that its actions taken do not perpetuate historic injustices to previously excluded communities and interests, including those of the 30 sovereign tribal nations<sup>8</sup>, Mexico, and the ecosystems in the Colorado River Basin. Unfortunately, the 2007 Interim Guidelines did not address ensuring water security for the 30 tribal nations, restoring flows in critical reaches of the Colorado River, nor safeguarding water for future generations. These issues remain and are still fundamental, even more so in times of shortage, and need to be equitably resolved for the basin to move forward. Under the status quo, these values continue to take a back seat to business-as-usual use of water in the Basin. Even as we approach system collapse, the revisions proposed fail to address these important values and the need for justice for Native communities and the environment in the basin.

### ***B. Reclamation must redefine the purpose and need of the SEIS.***

Reclamation describes the purpose of the SEIS to supplement the prior environmental impact statement (EIS) for the 2007 Interim Guidelines so the original guidelines can be revised "to address historic drought and low runoff conditions." (87 Fed. Reg. 69043). "The need for the revised operating guidelines is based on the potential that continued low runoff conditions in the Colorado River Basin could lead Glen Canyon Dam to decline to critically low elevations impacting both water delivery and hydropower operations in 2023 and 2024." *Id.* Reclamation intends to accomplish this by "modify[ing] current operations and reduc[ing] Glen Canyon Dam downstream releases, thereby impacting downstream riparian areas and reservoir elevations at Lake Mead." *Id.* This strategy to maintain a surgical focus on reservoir levels and hydropower operations as found in the 2007 Interim Guidelines, however, misses the forest for the trees.

A reduction in annual release volumes from Glen Canyon Dam, not only implicates operations as described in the 2007 Interim Guidelines, but raises issues that were not contemplated in the operational guidelines for the Glen Canyon Dam Long-Term Experimental and Management Plan (LTEMP). There is no schedule of monthly release volumes below 7 million acre feet in the LTEMP and the guidelines do not address the rate of flow based on those reduced delivery

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<sup>8</sup> Joint Secretarial Order on Fulfilling the Trust Responsibility to the Indian Tribes in the Stewardship of Federal Lands and Waters, Order No. 3403 (November 15, 2021).

volumes. The implications for the environmental and cultural resources in the Grand Canyon given the continuing and amplified impacts of climate change and the reduction in annual flows proposed, will create a cascade of consequences that have not been examined in any other process under the National Environmental Policy Act (“NEPA”). Reclamation needs to prepare a companion SEIS for the LTEMP ROD to address this annual volume reduction and we strongly recommend that the “comprehensive review” for the LTEMP adaptive management program be incorporated into or occur parallel with the renegotiation of the post-2026 guidelines. In this analysis, and at a minimum, Reclamation needs to integrate this analysis with the existing operational guidelines for the LTEMP that were developed in and exist parallel to the 2007 Interim Guidelines despite being inextricably intertwined. Thus, the scope of the SEIS needs to be expanded.

***C. Reclamation must revise the foundational objective for operating Lake Powell and Lake Mead.***

Reclamation proposes very pointed revisions to Sections 6.C. and 6.D. of the guidelines with the purpose of modifying the quantity of water that can be released from Glen Canyon Dam at the Mid-Elevation Release Tier and Lower-Elevation Balancing Tier. We understand that this could help stabilize reservoir levels, but we believe Reclamation needs to go a step further and revise the underlying objectives used to guide the operation of the reservoirs. The 2007 Interim Guidelines establish that the objective for operating the reservoirs “is to avoid curtailment of uses in the Upper Basin, minimize shortages in the Lower Basin and not adversely affect the yield for development available in the Upper Basin.”<sup>9</sup> However, continuing to prioritize these objectives simply perpetuates the unsustainable use and management of water in the Basin that got us into this crisis in the first place. We believe Reclamation should be transparent and clear that operations of these reservoirs going forward needs to protect the sustainability of the Colorado River, ensure water security for the 30 tribal nations that for a century were left behind, and honor the full range of values of the river and its ecosystems. This may require deprioritizing power production to meet the mandates of the Grand Canyon Protection Act of 1992<sup>10</sup> or implementing a more far reaching and comprehensive strategy that includes reengineering Glen Canyon Dam to allow for bypass flows at low reservoir levels. While this SEIS may be a part of the “near term actions to stabilize the decline in reservoir storage and prevent system collapse”, it is also said to serve “to inform and complement the development of the post-2026 guidelines.” (87 Fed. Reg. 69043). Therefore, we believe the time is now to show your commitment to rethinking the historically exclusive, consumptive, and narrowly tailored way in which we manage and value the Colorado River.

***D. Reclamation must rethink the scope of its management priorities based on its authority under the Grand Canyon Protection Act of 1992.***

The Grand Canyon Protection Act of 1992 (“GCPA”) provides that:

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<sup>9</sup> U.S. Bureau of Reclamation. 2007. Record of Decision: Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead: Final Environmental Impact Statement. Washington, D.C. : U.S. Bureau of Reclamation. December 13.

<sup>10</sup> Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, 106 Stat. 4600 (1992).

The Secretary shall operate Glen Canyon Dam in accordance with the additional criteria and operating plans specified in section 1804 and exercise other authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use.

At its essence, the Act shifts the balance of management in favor of protecting the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, at the expense of other benefits such as hydropower generation.<sup>11</sup>

Former Reclamation Commissioner and Deputy Secretary of the Interior, Michael Connor, described the Act<sup>12</sup> as follows:

The GCPA is a congressional attempt to protect the natural and cultural environment downstream of Glen Canyon by defining the priorities under which DOI must operate the dam. The law of the river is still paramount in dictating releases, but now the protection of downstream resources takes priority over all other values. In fact, the legislative history indicates that the **GCPA specifically rejects the notion that power generation has any priority over protection of downstream environmental, recreational, or cultural values.** This reordering of priorities, recognizing traditionally overlooked values, is by itself enough to make the GCPA a significant piece of legislation.” *Id.* at 152 (Emphasis added).

Further, the goal of the GCPA goes beyond protecting downstream resources and specifically contemplates “improv[ing] the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established.” *Id.* at 154.

Senator McCain suggested before the legislation was passed that

Enactment of the Grand Canyon Protection Act ... is critical because it will provide vital guidance and legal support to the Secretary in [their] efforts. Congress has an obligation to permanently and clearly codify our standards in statute and leave no doubt now and in the future, about our national responsibility to protect the Grand Canyon.

*Id.* at 150. Reclamation has authority under the Grand Canyon Protection Act that “gives priority to protection of the Grand Canyon, and all other values must operate within this mandate.” *Id.* at 137.

The need to save water in Lake Powell to ensure water deliveries and hydropower operations ignores the mandates of the Grand Canyon Protection Act. (87 Fed. Reg. at 69043). Reclamation not only ignores that directive, but declares that

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<sup>11</sup> Section 1809 of the Grand Canyon Protection Act contemplates “replacement power” might be necessary if power generation is lost through adoption of long-term operational criteria.

<sup>12</sup> Connor, Michael. June 1994. Extracting the Monkey Wrench from Glen Canyon Dam: The Grand Canyon Protection Act – An Attempt at Balance. 15 *Pub. Land L. Rev.* at 150.

<https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=1313&context=plrlr>

In order to ensure that Glen Canyon Dam continues to operate under its intended design, Reclamation may need to modify current operations and reduce Glen Canyon Dam downstream releases, **thereby impacting downstream riparian areas** and reservoir elevations at Lake Mead. *Id.* (Emphasis added).

Reclamation needs to broaden the scope of its review and revision of the 2007 Interim Guidelines for the SEIS with this larger perspective on its authority in mind. This is exactly what the Grand Canyon Protection Act asked the Secretary to do. How can the Secretary protect water levels and thus the ability to release water from Glen Canyon Dam while honoring, protecting, and improving the Grand Canyon ecosystem and the interests of the affiliated tribes? What impacts will occur in the Grand Canyon at reduced annual flows and would operations need to change to protect against environmental harm? Is hydropower the right value to prioritize given the circumstances? What benefits to the ecosystem would occur if active hydropower generation was deprioritized? What opportunities exist to conserve water or improve the downstream resources if hydropower is not a factor? These are all good questions for Reclamation to consider in conducting its analysis.

***E. Reclamation must account for and allocate system losses to appropriate water users in the basin to conserve water.***

1. Seepage

“A significant amount of water seeps around Glen Canyon Dam and enters the Colorado River upstream from Lees Ferry.” (Wang & Schmidt 2020 at 8). Based on water years 2005 to 2019, streamflow between Glen Canyon Dam and Lees Ferry is about 150,000 acre feet per year. *Id.* This amount is half of Nevada’s total consumptive use. *Id.* “This amount of seepage is significant, and is a transfer of water from the Upper Basin to the downstream river.” *Id.* The study calls for a “renewed study of the magnitude of seepage around Glen Canyon Dam that reenters the Colorado River upstream of Lees Ferry, including groundwater modeling.” *Id.* at 2 and 23. We agree that Reclamation should study and determine a method to account for and allocate the seepage amount as a water delivery from the Upper to the Lower Basin of the Colorado River. If such seepage is allocated as a delivery from the Upper Basin, then that water will no longer be lost to the system but accounted for and factored into Upper Basin deliveries. The amount of water now delivered as seepage can be stored in Lake Powell as additional deliveries.

2. Evaporation

From 2010-2015, the annual evaporation losses from Lake Mead were about “559,000 acre feet per year and were 5.4 percent of the total outflows and losses from Lake Mead.” (Wang & Schmidt, 2020 at 17.) “Evaporation losses from Lake Mead were more than twice the consumptive uses by the state of Nevada.” *Id.* The authors recommend “maintaining the long-term program to measure evaporation from Lake Mead and make the present experiment program at Lake Powell a permanent monitoring program.” *Id.* at 2 and 23. Evaporation losses should be measured, accounted for and allocated to water users within the Basin. Like water savings from accounting for seepage, allocation of Lower Basin evaporation losses to water users will subtract this amount from their allocation and allow more water to be stored in Lake Mead.

**F. Reclamation must account for and protect groundwater and baseflow contributions to the Colorado River.**

1. Groundwater inflows into the Grand Canyon

The Colorado River downstream of Lees Ferry receives significant intervening flows from tributary streams as well as from large springs within the Grand Canyon that contribute to ground and surface water in the region. (Wang & Schmidt, 2002 at 10). Between 1990 and 2018, 768,000 acre feet of water per year entered the Colorado River between the Lees Ferry and the Diamond Creek gauges. *Id.* at 11. The Paria and Little Colorado rivers contributed 17 percent (133,000 acre feet per year) of these intervening flows and the remaining 83 percent (635,000 acre feet per year) came from groundwater within the Grand Canyon. *Id.* Similarly, flow data collected from 2007 to 2018 showed intervening flows in the Grand Canyon averaged 710,000 acre feet per year. *Id.* at 13. Importantly, the study concluded “gaging measurements between 2007 and 2018 suggest that most of the intervening inflows came from spring sources within the Grand Canyon that directly drain to the Colorado River or its perennial tributaries. *Id.* Springs in the lower part of the Little Colorado River canyon are a large source of water.” *Id.* Intervening inflows—that largely originate as groundwater in the Grand Canyon—should be studied, accounted for as part of the inflows to the Colorado River, and Reclamation and other basin partners should make every effort to ensure that these flows are protected from unregulated groundwater pumping for development in and around the Grand Canyon in Arizona. Groundwater withdrawals in this area threaten flows into the Colorado River, the Grand Canyon ecosystem, and water source as well as cultural and spiritual interests of tribes. As water supplies dwindle, Reclamation needs to account for and consider valuable every drop of water in the basin including that from groundwater sources and advocate for its protection.

2. Baseflows in the Upper Basin

Similar to intervening flows in the Grand Canyon, baseflows are an important source of water that typically bolster Upper Basin streamflow. A 2021 study determined that “[a]pproximately 85%-90% of the total water year runoff in the [Colorado River Basin] starts in the [Upper Colorado River Basin].” (Miller et al. 2021 at 2). More than half (56%) of that streamflow in the Upper Colorado River Basin provides baseflow—groundwater discharge to streams—that helps maintain surface flows. *Id.* Climate change is threatening to reduce the baseflow supplied to the Lower Colorado River Basin by 33 percent. *Id.* at 9. “The projected baseflow changes are expected to impact both human and ecological users with the greatest declines occurring under the [hot/dry] scenario.” *Id.* “Study findings suggest that ongoing water availability challenges in the [Colorado River Basin] may continue and be exacerbated in the future.” *Id.* These warnings on the impact of climate change on groundwater contributions from the Upper Basin suggest that Reclamation should consider these declines in modeling streamflow. Further, based on the impacts that have occurred to water supplies already due to climate change, Reclamation should prioritize worst-case hydrologic scenarios to determine the amount of water that can actually, responsibly, be allocated in the Colorado River Basin for use so as to maintain water needed to sustain ecological, tribal and other unaccounted for important needs in the Basin.

***G. Reclamation must prioritize water conservation and demand reduction as part of any solution.***

Reclamation must prioritize water use reductions and conservation over simply reservoir storage and operations to maximize management options and flexibility. Bruckerhoff et al. 2021 used environmental metrics to compare “the outcome of combinations of water storage scenarios and consumptive use limits.”<sup>13</sup> The study determined that where water was stored “was less important when less water was available, highlighting the importance of keeping water in the system to provide flexibility for achieving ecosystem goals.” *Id.* at 1. The authors concluded

Reservoir levels of both Lake Powell and Lake Mead will likely continue to decline regardless of where water is stored unless consumptive use is limited, so limiting consumptive use may provide the most flexibility in managing ecosystem drivers.

*Id.* at 16. We reiterate this point to encourage Reclamation to do everything in its power to reduce water use within the basin to levels that allow reservoirs to recover and increases flexibilities for water management. While Reclamation has suggested 2 to 4 million acre feet of reduced demand, the amount of reductions likely needs to be greater if the basin states and Reclamation actually intend to address issues that have long been put on the shelf including water for the environment and fulfilling tribal water rights and ensuring tribal water security.

***H. Reclamation must expand geographic scope of effects analysis in the SEIS to include upstream reservoirs that have contributed flows under DROA to maintain reservoir levels.***

In the Final EIS for the 2007 Interim Guidelines, Reclamation determined upstream geographic scope of the affected environment to include “the full pool elevation of Lake Powell.” FEIS at 3-3. Given the subsequent agreements to the 2007 Interim Guidelines, the Drought Contingency Plans (DCPs) and the Drought Response Operations Agreements (DROAs), we believe the geographic scope of the SEIS needs to be expanded to include the upstream reservoirs that are providing these operational releases and the intervening river miles. While such reservoir releases can benefit environments downstream, such releases may also have impacts or create opportunities to time these flows to create broader benefits to multiple interests. Thus, the affected environment analysis should include these areas for a complete look at the action in the basin.

**II. Additional Alternatives Must be Evaluated in the SEIS**

A strong need exists for Reclamation to analyze additional alternatives beyond the No Action, Framework Alternative, and Reservoir Operations Modification Alternative suggested in the Notice. (87 Fed. Reg. 69044). The intensity of the crisis means that no one solution will address the larger more systemic problems in the basin including that demands continue to outpace

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<sup>13</sup> Bruckerhoff, L.A., Wheeler, K., Dibble, K.L, Mihalevich, B.A., Neilson, B.T., Wang, J., Yackulic, C., and Schmidt, J.C. 2022. Water Storage Decisions and Consumptive Use May Constrain Ecosystem Management under Severe Sustained Drought, *Journal of the American Water Resource Association* 58 (5): 654-72. <https://doi.org/10.1111/1752-1688.13020>

supply, water security for the tribes requires water be developed for those communities, reservoir levels are at historically lows, dam infrastructure may not be reliable at low flows, no water is set aside for the environment, and the list goes on.

Even in this intentionally narrow process to obtain additional authorities, Reclamation can be more innovative and creative. As it stands, the same interests are protected that stand to benefit (water users, hydropower interests), while the same interests left to shoulder the burden (tribes and the environment) stand to lose. The tables need to be turned to distribute the burden, albeit painful, and Reclamation has at least some of the authority it needs right now to start this process. Reclamation needs to rethink how it can equitably distribute the burdens of the challenges ahead. The tribes, the ecosystem, and native fish can no longer shoulder this burden alone, nor should they be required to contribute additional water or face additional impacts.

At this preliminary stage, we believe additional alternatives would help seed ideas and allow Reclamation to potentially create from the options a combination alternative that could help shift the basin away from the old way of doing into a new way of thinking. Reclamation should support the development of these additional alternatives by providing technical support to and engaging with the interests developing the alternatives. We understand that the timeframe is tight but believe that this effort could be vital to begin the framework for the renegotiation of the post-2026 guidelines and to show the agencies commitment to its trust responsibility to the tribes and its commitment and obligations to the environment.

As Reclamation evaluates how to “address historic drought and low runoff conditions in the Colorado River Basin” as described as the purpose for these revisions, it needs to understand and explore the opportunities that are presented if new interests are prioritized. For example, if Reclamation modified its “needs” statement to remove the prioritization of “hydropower” at low flows what openings might be created for ecosystem health downstream? If hydropeaking in the river were to cease downstream of Glen Canyon Dam would reducing the annual release volume still allow for ecosystem benefits in the Grand Canyon?

We understand that hydropower is an important contribution to energy in the West and it also has incredibly damaging effects on the ecosystem downstream. Reclamation appears to be very committed to maintaining hydropower generation at all costs and at the same priority level as ensuring water deliveries downstream. This cuts directly against the balance struck by Congress in the Grand Canyon Protection Act of 1992.

The Act’s preamble states that widely fluctuating releases of water from Glen Canyon Dam severely damage the river corridor downstream by eroding beaches, destroying wildlife habitat, killing native endangered fish, and endangering archaeological sites. To combat these problems, the GCPA mandates that the Secretary of the Interior “operate Glen Canyon Dam . . . in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established.” (Connor 1994 at 136).

While Congress made clear that the directive in the GCPA is subject to the requirements of the law of the river, “[t]he legislative history emphasizes that all other values, including power generation, are subservient to the goal of protecting the natural and cultural downstream resources.” (*Id.* at 154, emphasis added).

We believe that this reprioritization needs to be addressed in a separate alternative. The Grand Canyon Protection Act Alternative should evaluate the risks and benefits of deprioritizing hydropower at Glen Canyon Dam and exploring different ways the dam can be operated at low flows and with different annual water deliveries to “protect, mitigate adverse impacts to, and improve the values for which the Grand Canyon National Park ... [was] established.” (GCPA, Section 1802(a).) The alternative would need to investigate the implications to hydropower generation at different release levels, the impact to communities that source their power from the Dam, how to mitigate or subsidize those impacted communities, the benefits to native species, sediment transport and accumulation, the benefits to flows in the river, the timing of flows, etc. Both short term and long-term solutions in the Colorado River Basin will require everything to be put on the table and now is the time to start that process.

We understand that the LTEMP Record of Decision and FEIS analyzed and balanced these considerations and set in motion an adaptive management process for managing flows in the Grand Canyon. However, we are concerned that the interconnection between the 2007 Interim Guidelines and the LTEMP operational guidelines requires that Reclamation take a comprehensive look at how the impacts of climate change (at rates that are shocking to all of us) and the needs and risks to the Colorado River are necessitating different management strategies. While this may be better suited for the integration in the post-2026 guidelines discussion, the fact that a SEIS is going to look at the impacts of reduced flows from Glen Canyon Dam, the management considerations and choices in the LTEMP are equally relevant here and a SEIS may also be required for LTEMP operations.

### **III. *Expand Cooperating Agencies for SEIS***

Reclamation should reconsider who should serve as “cooperating agencies” for the SEIS. In Reclamation’s NOI, the agency presumes that the cooperating agencies for the SEIS will include the same five federal agencies that participated in the NEPA process for the 2007 Interim Guidelines (the Bureau of Indian Affairs, the Fish and Wildlife Service, the National Park Service, Western Area Power Administration, and the U.S. Section of the International Boundary and Water Commission). While we believe these agencies are still relevant and should server as cooperating agencies, this is a narrow view of the revisions the Guidelines and we believe the effort could benefit from additional agencies—particularly the Environmental Protection Agency (“EPA”). The EPA has specialized expertise in water quality, which at low water levels is likely to become a key issue related to environmental effects of the proposed revisions. Further, recent examples in the Colorado River Basin, demonstrate the inclusion of tribes, state wildlife agencies, and others as cooperating agencies can provide additional valuable perspectives. The LTEMP process under the Grand Canyon Protection Act was one of these processes where six tribes and other agencies served as cooperating agencies. In the status as cooperating agency tribes may have more incentive as well as resources to engage in the review process underway. Reclamation should consider investigating whether there are other parties that are interested and could help to refine and revise the Guidelines and invite them to participate in this process.

### **IV. *Integration of Human Health and Safety Considerations in Operational Decisions***

The integration of human health and safety considerations into decision making first requires a method to identify and describe the risks. Only once the risks are identified can those

considerations be weighed in decision making. Vulnerability assessments<sup>14</sup> are one method that may be worth exploring or integrating into the NEPA process. These assessments have become more common to evaluate how climate change risk are distributed in communities. In some assessments carefully crafted surveys are given or interviews are conducted to understand what the vulnerabilities are in communities. Once those full range of risks are assessed, then the vulnerabilities are determined, evaluated, and incorporated into decision making process.

In the Colorado River Basin, these concerns are playing out based on economic and social conditions as well as environmental conditions. Climate change is only exacerbating many of the vulnerabilities felt in the basin. For example, here are some issues that may be conducive to being identified and analyzed through the vulnerability assessment process: 1) over withdrawal of groundwater threatens tribal water source or cultural resources, 2) poor water quality, 3) air quality from lack of inflows into the Salton Sea, 4) lack of access to drinking water by tribal communities or potential future lack of access due to low reservoir levels in Glen Canyon Dam (e.g. LeChee Chapter, Navajo Nation), 5) threatened drinking water supply (e.g. Page, AZ), 6) cost and equity in replacing energy from hydropower, 7) water temperature impacts on water quality, etc.

We appreciate Reclamation considering how to better integrate these considerations and look forward to working with you to make this part of analyses going forward and incorporated into decision making of the agency.

## **V. Full Effects on Environmental and Cultural Resources in the Grand Canyon Must be Evaluated in the SEIS**

Reclamation's proposal to revise the 2007 Interim Guidelines to allow for reductions in the annual volume of releases from Glen Canyon Dam will impact environmental and cultural resources in the Grand Canyon. Reclamation said as much in its purpose and need for the SEIS

Reclamation may need to modify current operations and reduce Glen Canyon Dam downstream releases, thereby impacting downstream riparian areas and reservoir elevations at Lake Mead." (87 Fed. Reg. at 69043).

The environmental and cultural values of the Grand Canyon are vast.<sup>15</sup> In addition to the high profile impacts to the imperiled humpback chub a result of non-native fish species like small mouth bass, the Grand Canyon is also home to flannelmouth suckers, speckled dace, bluehead sucker; Southwestern willow flycatchers, the only remaining population of northern leopard frog downstream of the dam, yellow-breasted chat, Ruby-crowned kinglet, beaver, western red bat, Grand Canyon evening primrose, Kanab ambersnail, among many others. There are 6,400 acres of riparian vegetation in the canyon.

According to a survey done in the early 1990s, 475 cultural sites were documented and more than half of them potentially subject to impacts from dam operations. The list goes on and on, but we raise these issues to remind the agency that reservoir levels, dam operations, and reductions in water releases have real on the ground impacts on the

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<sup>14</sup> National Park Service, Climate Change Vulnerability Assessment: <https://www.nps.gov/subjects/climatechange/vulnerability.htm>

<sup>15</sup> U.S. Bureau of Reclamation. Final Environmental Impact Statement – Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, October 2007 at Chapters 3 and 4.

ecology of the Grand Canyon and the cultures of Native communities. We hope you will take the time necessary to ensure a complete and comprehensive analysis is conducted with input from tribes, cooperating agencies and others.

Again, the reduction in flows from Glen Canyon Dam under the revisions proposed is concerning because the overall volume of flows annually will be reduced and that will change the monthly flow distribution in the canyon. The LTEMP operational guidelines are based on existing annual and monthly flow volumes that were higher than Reclamation is contemplating in the SEIS. In addition, the hydrologic conditions in the basin today look much different than they did in 2007 when the Interim Guidelines were negotiated and even in 2016 when the LTEMP guidelines for the canyon were established. Reducing the overall flows in the canyon without having the flexibility to reevaluate or reconsider the choices that were made in the past may constrain any long-term solution that is really needed to operate or reconfigure the dam in low flows, ensure the cultural and ecological resources in the canyon are protected and improved, ensure water deliveries downstream, and ultimately sustain the entire water system for this and future generations in the basin.

## **VI. Relevant Information and Studies**

The following studies may provide insights into the environmental review process for the SEIS for the 2007 Interim Guidelines:

- Bruckerhoff, L.A., Wheeler, K., Dibble, K.L., Mihalevich, B.A., Neilson, B.T., Wang, J., Yackulic, C., and Schmidt, J.C. 2022. Water Storage Decisions and Consumptive Use May Constrain Ecosystem Management under Severe Sustained Drought, *Journal of the American Water Resource Association* 58 (5): 654-72. <https://doi.org/10.1111/1752-1688.13020>
- Connor, Michael. June 1994. Extracting the Monkey Wrench from Glen Canyon Dam: The Grande Canyon Protection Act – An Attempt at Balance. 15 *Pub. Land L. Rev.* 135. <https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=1313&context=plrlr>
- Miller, O. L., Miller, M. P., Longley, P.C., Alder, J. R., Bearup, L. A., Pruitt, T., et al. (2021). How will baseflow respond to climate change in the Upper Colorado River Basin? *Geophysical Research Letters*, 48, e2021GL095085. <https://doi.org/10.1029/2021GL095085>
- Topping, D.J., Schmidt, J.C., and Vierra, Jr., L.E. 2003. Computation and Analysis of the Instantaneous-Discharge Record for the Colorado River at Lees Ferry, Arizona—May 8, 1921, through September 30, 2000. Professional Paper 1677. U.S. Geologic Survey <https://pubs.usgs.gov/pp/pp1677/>
- Wang, J., and Schmidt, J.C. 2020. *Stream flow and Losses of the Colorado River in the Southern Colorado Plateau*, White Paper No. 5, The Future of the Colorado River Project, Quinney College of Natural Resources, Utah State University. <https://qcnr.usu.edu/coloradoriver/futures>

- Woodhouse, C.A. et al. (2021). Upper Colorado River Basin 20<sup>th</sup> century droughts under 21<sup>st</sup> century warming: Plausible scenarios for the future. *Climate Services* 21. <https://doi.org/10.1016/j.cliser.2020.100206>
- U.S. Government Accountability Office. 1979. Colorado River Basin Water Problems: How to Reduce their Impact. *Report to the Congress of the U.S.* <https://www.gao.gov/assets/ced-79-11.pdf>

We appreciate the opportunity to provide scoping comment on the SEIS for proposed revisions to the 2007 Interim Guidelines. We look forward to working with you and other partners in the basin to find solutions to the complex and critically important challenges facing Colorado River Basin and work toward a more just and sustainable future for the river and its communities.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jen Pelz', with a long horizontal flourish extending to the right.

Jen Pelz  
Water Advocacy Director  
Grand Canyon Trust