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*via email only: [crbpost2026@usbr.gov](mailto:crbpost2026@usbr.gov)*

Re: State of Arizona Comments on the Post-2026 Colorado River Reservoir Operations Draft Environmental Impact Statement (EIS Number 20250184)

Dear Ms. Nelson:

The Arizona Department of Water Resources (ADWR), acting on behalf of the State of Arizona, appreciates the opportunity to comment on the Bureau of Reclamation's Draft Environmental Impact Statement (Draft EIS) for the Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead. The Draft EIS proposes five alternatives to manage an increasingly uncertain hydrologic future for the Colorado River but each alternative suffers from serious legal and analytical defects.

Most importantly, none of the alternatives comply with the 1922 Colorado River Compact (Compact), in direct violation of federal law and Reclamation's own stated intention to adhere to the Law of the River.<sup>1</sup> The Compact - which Congress has embedded in federal law - is the cornerstone of the Law of the River. Among other things, it provides that the Upper Basin states must deliver certain quantities of Colorado River water to the Lower Basin states each year. Surprisingly, even after numerous requests to Reclamation for the inclusion of such an alternative and analysis, the Draft EIS fails to include an alternative that implements reasonable steps to ensure that Compact deliveries are made.

The Draft EIS contains several other flaws. It fails to consider the serious economic and national-security impacts from severely reducing water deliveries to Arizona. It fails to

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<sup>1</sup> See, e.g., 1922 Colorado River Compact, reprinted in 70 Cong. Rec. 324 (Dec. 10, 1928), Boulder Canyon Project Act, 43 U.S.C. § 1521 *et. seq.*; Decree in *Arizona v. California*, 376 U.S. 340 (1964); Colorado River Basin Project Act, 43 U.S.C. § 1521 *et. seq.*

grapple with the full effects on Indian Tribes with whom the federal government has a trust relationship. It rests on flawed and biased projections of Upper Basin growth. And it incorporates several problematic and outdated modeling assumptions.

Below ADWR identifies various fatal flaws in the alternatives analyses presented in the Draft EIS. An attachment to this letter lays out additional technical comments in a table format.

**I. The Draft EIS fails to present any alternative that adheres to the Colorado River Compact and the Law of the River.**

NEPA directs federal agencies to analyze a “reasonable range of alternatives” to a proposed agency action that “meet the purpose and need of the proposal.”<sup>2</sup> A reasonable alternatives analysis must reflect the legal framework that defines the agency’s relevant authority and obligations, as well as the rights and constraints governing affected third parties.<sup>3</sup> Reclamation has properly identified the most relevant legal requirements that apply here: the Draft EIS states that Reclamation “intends to consider, adopt and implement [guidelines] consistent with the Law of the River, including the Colorado River Compact of 1922.”<sup>4</sup> As Reclamation acknowledges, the 1922 Compact is a part - indeed, the core part - of the Law of the River.<sup>5</sup>

In a letter dated February 13, 2025, Arizona, California, and Nevada (the Lower Basin states) notified the Secretary of his duty to ensure that any proposed alternative in the forthcoming Draft EIS complies with the requirements of the Compact. The Draft EIS, however, fails to properly consider Compact compliance (or the reasonably foreseeable consequences of Upper Basin non-compliance) in its alternatives analyses.

The Colorado River Compact mandates that the Upper Basin has an obligation to deliver at least 82.5 maf of Colorado River water to the Lower Basin in any 10-year period.<sup>6</sup> The Upper Basin is required to meet that delivery obligation, including through the usage of

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<sup>2</sup> NEPA § 102 (C)(iii), 42 U.S.C. § 4332(C)(iii).

<sup>3</sup> See *Vt. Yankee Nuclear Power Corp. v. Nat’l Res. Def. Council, Inc.*, 435 U.S. 519, 551 (1978) (explaining that an agency must consider feasible alternatives to regulatory action); *Utahns for Better Transp. v. U.S. Dep’t of Transp.*, 305 F.3d 1152, 1172 (10th Cir. 2002) (“NEPA requires the rigorous exploration and evaluation of reasonable alternatives.”); cf. *Protect Our Cmty’s. Found. v. LaCounte*, 939 F.3d 1029, 1043 (9th Cir. 2019) (explaining that agency action should be invalidated where it sanctions unlawful conduct).

<sup>4</sup> Draft Environmental Impact Statement (DRAFT EIS) at 1-4; see also DRAFT EIS at 1-5 (“[T]he Department intends to adopt and implement the guidelines in a manner consistent with the Law of the River.”); DRAFT EIS at 1-7 (“These responsibilities are carried out consistent with the Law of the River.”).

<sup>5</sup> Draft EIS at 1-4, 1-13.

<sup>6</sup> To be more precise, the Colorado River Compact mandates delivery to Lee Ferry of (a) at least half of the U.S. obligation pursuant to the Treaty with Mexico (750,000 acre-feet per year in a normal year) and (b) 75 million acre-feet of Colorado River water to the Lower Basin in any 10-year period. Arizona also asserts that the obligation with respect to deliveries to Mexico should include the losses associated with the Upper Basin’s portion of that delivery.

stored water in its Upper Initial Units (UIUs) regardless of whether the Upper Basin states (Colorado, New Mexico, Utah, and Wyoming) are using their full allocations under the Compact. In the event the Upper Basin fails to meet its delivery obligations, a “Compact Call” is available to the Lower Basin states to enforce the terms of the Compact. In such circumstances, a court will either enforce the 82.5 maf minimum delivery requirement, including the usage of UIU storage volumes, or impose some variation of this requirement. But there is no legal outcome where reductions that are necessary to maintain adequate reservoir levels at Lake Powell and Lake Mead are imposed almost entirely on the Lower Basin. In particular, the Basic Coordination Alternative, which Reclamation notes is the only alternative it could implement “absent new agreements among Basin water users”<sup>7</sup> should have analyzed the impacts of a Compact Call. Because the Basic Coordination Alternative is meant to analyze the most likely behavior and impacts in the Basin absent a negotiated agreement and replaced the Federal Authorities Alternative identified in the Reclamation’s Alternatives Report, analysis of a Compact Call in this alternative should have been included as specifically requested by the Lower Basin states in their February 2025 letter.

The Draft EIS, however, presents no alternative that would implement the Colorado River Compact and adhere to the Law of the River. Each of the five proposed alternatives wrongly assumes that the Upper Basin states have no duty to comply with their delivery obligations and would make no meaningful reductions in usage and therefore requires the Lower Basin states to accept disproportionate and inequitable reductions that contravene the Lower Basin’s rights under the Compact and the Law of the River. The failure of the Draft EIS to acknowledge that the Lower Basin states can seek enforcement of the Compact should the Upper Basin fail to comply with its obligations is a fatal flaw.

**a. The Draft EIS fails to consider reasonable steps the Secretary can take to ensure Compact deliveries.**

The Draft EIS’s alternatives analyses fails to take into account reasonable steps the Secretary can take to ensure deliveries that are consistent with the Compact, even apart from reductions in Upper Basin water use.

The Colorado River Basin Project Act (CRBPA) requires the United States to operate federal infrastructure in the Upper Basin to ensure Compact deliveries to the Lower Basin.<sup>8</sup> That requirement includes operation of the UIUs of the CRBPA reservoirs to release water to the Lower Basin. Yet Reclamation took an unduly narrow view of its authority in this Draft EIS to address a problem that is anything but narrow. Agencies cannot bind themselves to

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<sup>7</sup> Draft EIS at 2-11.

<sup>8</sup> Section 602 (a).

“unreasonably narrow” solutions when they have the authority to consider more comprehensive ones.<sup>9</sup>

Specifically, Section 602(a) of the CRBPA directs the Secretary to propose coordinated long-range operations “of the reservoirs constructed and operated under the authority of the Colorado River Storage Project Act, the Boulder Canyon Project Act, and the Boulder Canyon Project Adjustment Act.”<sup>10</sup> The reservoirs authorized under those statutes include the “initial units of the CRBPA, consisting of dams, reservoirs, powerplants transmission facilities and appurtenant works” that encompass Aspinall (formerly Curecanti) Unit, Flaming Gorge Unit, Navajo (dam and reservoir only) Unit, and Glen Canyon and Hoover Dams.<sup>11</sup> If there were any doubt, Reclamation’s own statements confirm that the UIUs were constructed for the principal purpose of delivering water at Lee Ferry to the Lower Basin to facilitate compliance with the Upper Basin’s delivery requirements.<sup>12</sup> The Draft EIS’s Purpose and Need for Action also expressly acknowledges that “the Secretary is legally required to coordinate operations of Colorado River reservoirs: The CRBPA directs the Secretary to adopt criteria for the coordinated long-range operations of the Colorado River reservoirs.” By artificially limiting the Draft EIS’s analysis to the mainstem dams and reservoirs, Reclamation has failed to follow congressional direction to coordinate operations among the UIUs. The Draft EIS must be expanded to include UIU operations as authorized reservoirs under the CRBPA.

**i. The Draft EIS fails to apply the Secretary’s full authority to manage the Colorado River system, thereby artificially inflating the risk to the Lower Basin.**

None of the Draft EIS alternatives analyze the operations of the UIUs, including storage, releases, and recovery, to meet Upper Basin Compact delivery obligations at Lee Ferry. The consequence of this failure is to artificially and unnecessarily increase the risk of shortage in the Lower Basin, undermining long-standing legal protections for the Lower Basin built into the Compact, which are supported by federal statutes and regulations.

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<sup>9</sup> See *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190 (D.C. Cir. 1991) (explaining that an agency cannot “define the objectives of its action in terms so unreasonably narrow that only one alternative could accomplish the goals of that agency action,” and that an agency in defining its objectives “should always consider the views of Congress, expressed...in the agency’s statutory authorizing act, a well as in other congressional directives”).

<sup>10</sup> 43 U.S.C. § 1552(a).

<sup>11</sup> *Id.* § 620.

<sup>12</sup> See *2005 Environmental Impact Statement for the Operation of Flaming Gorge Dam, Chapter 1*. It states: “...the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs (including Flaming Gorge Reservoir) mandated by Section 602(a) of the 1968 Colorado River Basin Project Act (43 U.S.C. § 1501 et seq.) requires that the Annual Operating Plan for Colorado River reservoirs...shall reflect appropriate consideration of the uses of the reservoirs for all purposes...”

As of February 28, 2026, approximately 4.4 maf is in storage in UIUs (Flaming Gorge, Blue Mesa, and Navajo reservoirs).<sup>13</sup> This water can and should be used to meet Compact delivery requirements as well as to prevent damage to the infrastructure at Glen Canyon Dam. But contrary to the Secretary's statutory obligations, and the express objectives identified in the Draft EIS, the Draft EIS presents no alternative that allows for the possibility of releases from the UIUs sufficient to satisfy those purposes. The Draft EIS instead claims that Reclamation's proposed actions are limited to management of Lake Powell and Lake Mead and that the use of the UIUs to assist in those management efforts is beyond the geographic scope of the EIS.<sup>14</sup>

While the Draft EIS acknowledges releases from the UIUs may be made, Reclamation classified such releases strictly as "Powell Infrastructure Protection Releases" (PIP) and outlines a stakeholder-driven process for arriving at release volumes. By framing such releases as PIP, Reclamation has ceded its authority to unilaterally operate the units and to make releases for *all* authorized purposes and ignored its obligation to ensure the delivery of water to the Lower Basin in compliance with the Compact's clearly articulated directions.

The Draft EIS accordingly assumes that disbursements from the UIUs under any of the proposed alternatives will be subject to use limitations and minimum water-level requirements set forth in the existing Records of Decision (ROD) governing those UIUs.<sup>15</sup> Specifically, the Flaming Gorge Dam ROD, which was adopted in 2006, did not focus on utilizing the water behind that dam to facilitate Compact compliance, and instead was put in place to ensure compliance with the Endangered Species Act and the Upper Colorado River Endangered Fish Recovery Program.<sup>16</sup>

Reclamation cannot reasonably purport to design a reservoir management plan that accords with the Law of the River, and in particular the Compact, but then present alternatives that fail to consider one of the primary tools at its disposal to ensure Compact compliance and protect critical infrastructure at Glen Canyon Dam. Nor can Reclamation claim to be taking action in accordance with its obligation under Section 602(a) to "coordinate operations of Colorado River reservoirs" while failing to consider coordination with critical Upper Basin reservoirs that were created for the primary purpose of ensuring sufficient water delivery to the Lower Basin and maintenance of Lake Powell and Lake Mead. Reclamation's insistence on artificially limiting the Draft EIS's scope to the mainstem dams and reservoirs contravenes the Secretary's own stated objectives. And Reclamation's decision to limit any proposed action here to the constraints set by the UIU RODs, which were expressly not designed to achieve Compact compliance or mainstem

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<sup>13</sup> <https://www.usbr.gov/uc/water/basin/colorado.png>.

<sup>14</sup> Draft EIS at 1-9.

<sup>15</sup> *Id.*

<sup>16</sup> Bureau of Reclamation, *Record of Decision: Operation of Flaming Gorge Dam Final Environmental Impact Statement 7 (2006)*, [https://www.usbr.gov/uc/envdocs/rod/fgFEIS/final\\_-ROD-15fed06.pdf](https://www.usbr.gov/uc/envdocs/rod/fgFEIS/final_-ROD-15fed06.pdf).

reservoir maintenance, is plainly unreasonable. The scope of the Draft EIS must be expanded to include UIU operations, as authorized reservoirs under the CRBPA.

**ii. The Draft EIS fails to consider engineering solutions to ensure Compact deliveries.**

The Draft EIS also fails to analyze any engineering solutions that could reduce the minimum elevation in Lake Powell required to protect critical infrastructure, thereby maintaining access to millions of acre-feet of water in Lake Powell that would otherwise be inaccessible.

Starting in 2022, Reclamation asserted that it must ensure an elevation in Lake Powell, both to retain physical release capacity and, more significantly, to avoid damaging critical infrastructure in Glen Canyon Dam.<sup>17</sup> In March 2024, Reclamation issued the “LaFond Memo” that subsequently established a Lake Powell elevation of 3,500’ as the new “de facto” hard protect elevation.<sup>18</sup> In doing so, it eliminated approximately 4.2 maf from the deliverable volume of water in the reservoir; water that was previously counted as reliable and available for use in the Lower Basin.

Since 2022, Reclamation has stated the river outlet works at Glen Canyon Dam may not be suitable for long-term water deliveries and that structural changes to those outlet works will be required if additional volumes are to be safely released from the reservoir.<sup>19</sup> But nowhere in the Draft EIS does it explore whether those structural changes can be designed to reduce the required minimum elevation, let alone explain why those change would not be technically and economically feasible as NEPA requires. The Draft EIS’s omission of any discussion of structural repairs as a potential solution to ensure sufficient delivery of Colorado River water to the Lower Basin is a further example of the Secretary’s failure to pursue federal actions that will facilitate Compact compliance.

**II. The Draft EIS fails to consider the substantial economic and national security impacts of the severe shortages proposed under each alternative.**

Because Reclamation limited the geographic scope of the impacts analysis in the Draft EIS to the mainstem corridor below Glen Canyon Dam, the analysis fails to consider impacts across a broad spectrum of resource areas. For example, as a result of its failure to fully analyze the socioeconomic impacts to the major metropolitan areas within the Lower Basin such as Phoenix, Las Vegas, and Los Angeles, the Draft EIS fails to address the NEPA requirement to consider the “direct effects” caused by the proposed action.<sup>20</sup>

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<sup>17</sup> Letter from Asst. Sect’y Tanya Trujillo to Dir. Buschatzke (Apr. 8, 2022) (on file at ADWR).

<sup>18</sup> Memorandum from Richard LaFond, Dir. Tech. Serv. Cntr., “Establishment of Interim Operating Guidance for Glen Canyon Dam during Low Reservoir Levels at Lake Powell,” (March 26, 2024).

<sup>19</sup> *supra* note 17.

<sup>20</sup> CEQ NEPA defines “direct effects” as effects “caused by the action and occur at the same time and place.” 40 CFR 1508.1(i).

Reclamation’s attempt to label socioeconomic impacts that occur away from the mainstem as “indirect” merely because of the distance from either Lake Powell or Lake Mead fails because the federal action will include guidelines pursuant to which the Secretary will reduce water deliveries to users who hold contracts with the Secretary pursuant to Section 5 of the Boulder Canyon Project Act (Section 5 Contractors) and Central Arizona Project (CAP) subcontracts. *But for* the Secretary’s decision to impose the proposed action in each of the five alternatives, Arizona’s Colorado River mainstem and CAP water users would not experience draconian shortages.<sup>21</sup>

Reclamation’s analysis also fails to consider impacts of the contemplated water restrictions under the proposed alternatives across a broad spectrum of resource areas – including national food security, critical microchip manufacturing, and socioeconomic impacts on Arizona communities – and thus violates NEPA’s requirement to consider and disclose the “reasonably foreseeable environmental effects” caused by any proposed action.<sup>22</sup>

- **National Food Production.** Arizona agriculture is a critical component of the nation’s food security, with the Yuma region providing 90% of the nation’s winter leafy greens.<sup>23</sup> The state’s agricultural production centers, including Yuma, rely on water from the Colorado River to maintain their food production. The Draft EIS acknowledges that the proposed alternatives will lead to decreased agricultural productivity, particularly in Arizona, which has already experienced severe Colorado River cutbacks in recent years.<sup>24</sup> But the Draft EIS, despite expressly identifying agricultural land use along the lower Colorado River as a vital source of food, fiber, and crop production for the country, fails to even acknowledge, let alone discuss in any detail, the severe impacts that shortages will have on the nation’s food security.<sup>25</sup>
- **National Security and Defense.** Arizona is a premier global hub for some of the world’s most advanced tech and manufacturing sectors - including world-class semiconductor, defense, and bioscience industries.<sup>26</sup> The federal government

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<sup>21</sup> *Compare Seven County Infrastructure v. Eagle County, Colo.*, 605 U.S. 168 (2025).

<sup>22</sup> 42 U.S.C. § 4332(C)(i), (ii).

<sup>23</sup> Duval, D. “Arizona’s Seasonal Role in National Supply of Vegetable & Melon Specialty Crops.” *and* <https://extension.arizona.edu/sites/default/files/2024-08/az1615-2020.pdf>.

<sup>24</sup> Draft EIS at 3-191.

<sup>25</sup> Draft EIS at 3-186.

<sup>26</sup> See “How Arizona Has Become U.S. Semiconductor Central,” Trade & Industry Development (Dec. 19, 2024), available at <https://www.tradeandindustrydev.com/region/arizona/how-arizona-has-become-us-semiconductor-central-33968> (“Since 2020, Arizona leads the nation in new semiconductor investment, with more than \$102 billion announced.”); Manufacturing: Industry Strengths, Arizona Commerce Authority, available at <https://www.azcommerce.com/industries/manufacturing/industry-strengths/?utm>.

recognizes that domestic microchip production is ‘integral to America’s economic and national security,’ and has previously recognized the importance of water access to maintain and grow this critical manufacturing.<sup>27</sup> But the Draft EIS, despite acknowledging that the alternatives may negatively impact Arizona manufacturing,<sup>28</sup> contains zero analysis of the impacts of severe shortage reductions to these cutting edge industries and ignores the foreseeable negative impacts on national security.

Arizona is also home to a preeminent and growing aerospace and defense industry hub with more than 1,000 companies, contractors, and suppliers. Arizona is a top-ten state for Department of War spending.<sup>29</sup> Arizona is ranked second overall in the Colorado River Basin (after California) for Department of War spending and first on a per capita basis. These private and public investments translate into more than 60,000 direct jobs, \$30B in annual economic impact, and imperative strategic capabilities with companies such as Raytheon, Boeing, Northrup Grumman, General Dynamics, MD Helicopters and Honeywell Aerospace’s new headquarters, powering Arizona to be *the* top state for guided missile and space vehicle manufacturing, among other key technologies.<sup>30</sup>

- **Socioeconomic Impact to Arizona’s Communities.** Arizona’s mainstem users must rely almost exclusively on Colorado River water. For those cities, towns, and other water users, substantial reductions during shortages will not only crush their economies but will deprive them of water supplies necessary to address their most basic needs. Many of these communities have no alternative supplies. But the Draft EIS’s analysis of anticipated socioeconomic impacts is limited to the effect of shortages on economic and social contributions from agriculture, benefits from lake-based and river-based recreation, and general “non-market” values like scenic quality, solitude and cultural connections.<sup>31</sup> Nowhere does the Draft EIS acknowledge that the severe shortages contemplated by the proposed alternatives impose existential threats to many of these communities’ continued viability.

Without analyzing the impacts on these industries and population centers, the Draft EIS falls far short of Reclamation’s statutory requirements under NEPA to address the reasonably foreseeable impacts of its proposed actions.

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<sup>27</sup> See About Chips for America, National Institute of Standards and Technology, available at <https://www.nist.gov/chips>; see also Fact Sheet: Arizona Semiconductor Industry, National Institute of Standards and Technology (July 2024), available at <https://www.nist.gov/system/files/documents/2024/07/18/07102024%20AZ%20Fact%20Sheet.pdf>.

<sup>28</sup> Draft EIS App’x 16 at 4.

<sup>29</sup> <https://www.war.gov/News/Releases/Release/Article/3935678/dod-releases-report-on-defense-spending-by-state-in-fiscal-year-2023/>

<sup>30</sup> <https://www.azcommerce.com/industries/aerospace-defense/>

<sup>31</sup> Draft EIS at 3-181.

It bears repeating that each of the five alternatives presented in the Draft EIS would lead to severe water shortages to Arizona's Colorado River supply. This federal proposal to cut off water supplies to substantial sectors of the state's economy also threatens to jeopardize national security priorities for the country. The existential fallout from the Draft EIS's proposed reduction of Colorado River water to the major metropolitan areas in the Lower Basin cannot be overstated and will be a direct result of the proposed federal action.

**III. The Draft EIS should acknowledge and protect the United States' trust responsibility to Tribes, particularly those with settlements that include CAP water.**

While the Secretary of the Interior is the "water master" in the Lower Basin, responsible for apportioning water among the states during shortage conditions, the Secretary also bears a significant trust responsibility to the Tribes in the Colorado River Basin. Twenty-two of the 30 federally recognized Tribes in the Colorado River Basin are situated in Arizona. Of those tribes, four were adjudicated to have mainstem entitlements pursuant to *Arizona v. California*, and 11 have entitlements to Colorado River water through the CAP.

All five alternatives in the Draft EIS impose draconian reductions on Tribes in Arizona reliant on CAP water. These shortages will not only affect the Tribes themselves, but also numerous Arizona cities and towns that lease water from the Tribes as part of those water settlements. The Secretary must ensure that the United States fulfills its commitments in those water settlements.

**IV. The Draft EIS relies on flawed growth projections of Upper Basin water demand as one basis for implementing severe reductions to Lower Basin water users.**

Much of the analyses in the Draft EIS are premised on an Upper Basin demand curve that purports to project growth in the Upper Basin. But the demand curve used by Reclamation is an unrealistic and outdated measure of anticipated Upper Basin growth, rendering the analyses in the Draft EIS defective and unreliable, and resulting in disproportionate shortages on the Lower Basin. Reclamation's use of those distorted projections is contrary to NEPA's requirement that federal agencies use reliable and accurate data and science when conducting a NEPA analysis.<sup>32</sup>

The demand curve used by Reclamation is based on projected growth trends that were originally developed in 2016.<sup>33</sup> Those projections, however, exceed the growth actually observed in the years since.<sup>34</sup> The projections also assume that Upper Basin demands will

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<sup>32</sup> 42 U.S.C. § 4332(D)-(E).

<sup>33</sup> Draft EIS at I-2, and also <http://www.ucrcommission.com/upper-colorado-river-division-states-depletion-demand-schedules/>.

<sup>34</sup> Draft EIS at I-3.

continue to grow independent of conditions on the river, and despite the fact that future river conditions will likely be at least as dry as they have been in recent history, reducing the demand for further growth. Further undermining the demand curve's reliability, the demand schedule on which those projections are based was produced by the *Upper Basin States* - the stakeholders who directly benefit from its bias.<sup>35</sup> Reclamation's continued use of the updated 2016 Upper Basin demand schedule is contrary to the best available data and common sense.

Moreover, the Draft EIS fails to contemplate any water use reductions in the Upper Basin, and in fact assumes that the Upper Basin water uses will increase. As a result, the effects of the proposed alternatives fall disproportionately on the Lower Basin. As described above, the United States must ensure that the Upper Basin States are meeting their 1922 Compact delivery obligations (including through a Compact call and curtailment, if necessary) before disproportionately reducing Lower Basin use. The United States should also consider potential outcomes if the Upper Basin maintains its existing demands without growth, recognizing that major infrastructure projects to support increased demands are less likely as the water availability is less reliable.

**a. Use of the 2016 Upper Basin demand curve disproportionately shifts the burden of shortages to the Lower Basin.**

Although Reclamation included a sensitivity analysis in Appendix I that analyzed a myriad of Upper Basin demands with the alternatives and different hydrologic starting conditions, the conclusions drawn in the body of the Draft EIS rely on the 2016 Upper Basin Demand Schedule.<sup>36</sup> Unsurprisingly, Appendix I concludes:

Across nearly all alternatives and performance metrics, lower steady-state demand scenarios (e.g., 4.5 million AF) produced higher elevations at Lakes Powell and Mead, greater Lee Ferry 10-year flows, and decreased Lower Basin shortages than higher steady state demand scenarios. Correspondingly, the Steady State 4.5 million AF scenario was the most robust, and Steady State 6.0 million AF the least robust, at maintaining Lake Powell above 3,500 feet and Lake Mead above 975 feet.<sup>37</sup>

In other words, the results of the sensitivity analysis demonstrate that the use of the Upper Basin's own demand schedule negatively affects outcomes for Lower Basin users. Nonetheless, these conclusions are omitted from the primary document's conclusions and the summary table in the Executive Summary for the decision-maker.

<sup>35</sup> Draft EIS at Appendix I-2. "The demand schedule is provided by the Upper Basin States and the UCRC on a decadal and sector basis...".

<sup>36</sup> Draft EIS at 3-8. "All results in Chapter 3, and the supporting technical appendices in Volume III are based on the single Upper Basin demand assumptions described above."

<sup>37</sup> Draft EIS at Appendix I-18.

Use of that flawed demand curve results in disproportionate impacts to the Lower Basin. As noted above, all of the Secretary’s proposed alternatives are fundamentally flawed because they do not presume compliance with delivery obligations to the Lower Basin under the Compact. But even accepting that flawed framework, the Draft EIS errs by proposing deeper cuts to the Lower Basin to account for inflated expectations of Upper Basin demand.

**b. Use of the 2016 Upper Basin demand curve to determine the 602(a) storage value further reduces water deliveries to the Lower Basin, in direct contravention of the Law of the River.**

The Draft EIS contemplates equalization of Lake Powell and Lake Mead under certain conditions utilizing the “602(a) algorithm” used in the 2007 Interim Guidelines for both the *No Action* and *Basic Coordination* Alternatives.

Specifically, the Draft EIS relies on the 602(a) algorithm developed as part of the 2007 Interim Guidelines to determine the conditions that trigger certain equalization measures for Lake Powell and Lake Mead.<sup>38</sup> As Reclamation’s sensitivity analyses demonstrate, the 602(a) algorithm is particularly sensitive to increases in expected water usage by the Upper Basin. A change in the Upper Basin depletion schedule between 4.4 maf/year and 5.5 maf/year, for example, creates a potential 15 maf/year difference in the 602(a) storage value that is used to determine whether additional water should be released to the Lower Basin from Lake Powell.<sup>39</sup> In other words, due to the assumption of Upper Basin growth, the reservoirs would be required to accumulate an additional 15 maf in storage to benefit speculative future Upper Basin water users before actual Lower Basin water users will see any benefit from equalization releases from Glen Canyon Dam.

Arizona joined California and Nevada in two letters to Reclamation, dated June 25, 2024 and February 13, 2025, in which extensive comments were provided regarding Reclamation’s continued use of the outdated 602(a) algorithm from the 2007 Interim Guidelines. Reclamation’s continued use of flawed projections to inform the 602(a) algorithm only exacerbates unjustified impacts on the water supply available to Lower Basin water users, and renders Reclamation’s proposed equalization measures in the Draft EIS fatally flawed.

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<sup>38</sup> Draft EIS at 2-10, 2-15. Arizona never agreed to the 602(a) algorithm in 2007.

<sup>39</sup> Draft EIS at App’x J, pg. J-6, Fig. J-4.

## **V. Flawed Modeling Assumptions in the Draft EIS Must Be Revised.**

Other assumptions and processes embedded and incorporated into the modeling in the Draft EIS – including relating to initial conditions, Lower Basin depletion schedules and UIU/PIP releases – are likewise problematic.

### **a. Initial Conditions**

The reservoir elevations and natural flow calculations are outdated and exclude more recent available information. Reclamation has utilized projected EOY 2026 elevations from the November 2024 model runs (Appendix G, Fig. G-1). While some lag is understandable, using projections from 18-month-old models is exceptionally problematic. This is readily observed from the comparison figures G-1 and G-2 in the Draft EIS. The high initial conditions are outside the bounds of the more recent projections, which consider the hydrologic conditions and events that have occurred over the last year. The Mid and Low initial conditions are, as noted, within the range of the CRMMS traces but remain far more optimistic than currently expected.

Likewise, regarding the preceding natural flows at Lee’s Ferry gage, Reclamation’s low, mid, and high estimates rely on outdated information and thus exhibit a range of uncertainty outside of the realm of present-day possibilities. Water Year 2025 natural flows are known, or can be calculated from a single, historical unregulated inflow as recorded by Reclamation.

### **b. Lower Basin Depletion Schedules**

The assumption that all users will achieve full build-out or full use of entitlement by 2040 (Appendix N, Table N-1) is based on an arbitrary deadline, ignores any recent historical trends in usage, and is unsupported by any user-specific information or planning documents. This is most easily observed through water use by tribal users, municipalities, and water users who currently have no use but are assumed to achieve full use by 2040. Even on-river irrigation, at least in the case of Arizona, has remained relatively constant over recent history, yet the depletion schedules ignore this information. This approach invariably decreases the available water to the junior priority users (MWD, SNWA, CAP), exaggerating and thereby exacerbating the impacts borne by these users even before considering changes to hydrologic conditions. In combination with the unrealistic Upper Basin depletion schedule, the Draft EIS fails to provide any reliable projections or analysis for stakeholders or Reclamation to adequately consider and compare the likely impacts of any of the alternatives.

### **c. UIU/PIP Releases and Recovery**

The Draft EIS employs two separate approaches for modeling UIU/PIP releases: a three-reservoir approach in the Continued Current Strategies baseline and the Basic Coordination Alternative; and a single reservoir (Flaming Gorge only) in the Supply Driven alternative (Appendix O, Fig. O-1). In addition to utilizing different reservoir combinations, they apply different sets of parameters. Assuming both approaches were acceptable,

Reclamation should have applied the same parameters to all alternatives where UIU/PIP releases were included, allowing for a comparison between the methodologies.

In the case of the single reservoir approach, this is inappropriate on its face, as all Upper Basin initial units are available for UIU/PIP releases. Additionally, this approach incorporates a limitation of 500,000 acre-feet for any releases. This limitation places an arbitrary cap on potential actions that might be needed to supplement downstream reservoirs. Finally, the target elevation is not adjusted downward for the relevant UIUs in either approach. There is no mechanism to restrict immediate recovery by resetting the elevation targets (example May 1 in Flaming Gorge), such that water is allowed to flow downstream unencumbered, rather than being stored, to the potential detriment of Lake Powell.

**d. Other comments pertaining to the technical analysis or lack thereof are contained in a Table attached to this letter.**

ADWR has attached a table containing additional comments on the Draft EIS, the Appendices in Volume 2, and the Technical Appendices in Volume 3. The comments are no less significant than those highlighted in the text above.

## VI. CONCLUSION

ADWR appreciates the opportunity to provide the comments outlined above as well as those attached to this letter, and the time and effort that the Bureau has invested in developing the Draft EIS. Unfortunately, the Draft EIS continues to suffer from fundamental legal and analytical defects that must be addressed before any final action is taken. The five Alternatives presented rest on flawed assumptions, disregard governing legal requirements, and fail to grapple with the profound consequences that would flow from the drastic reductions to Arizona's Colorado River supply contemplated therein.

Arizona remains committed to working constructively with Reclamation and its Basin partners to develop durable, legally sound solutions to manage the Colorado River system in an era of extreme hydrologic uncertainty. Durable solutions must be grounded in Compact compliance and a full, equitable, and transparent assessment of consequences. The Alternatives set forth in the Draft EIS do not meet that standard.

Sincerely,



Thomas Buschatzke  
Director

cc: Governor Katie M. Hobbs  
The Honorable Warren Petersen, President, Arizona Senate  
The Honorable Steve Montenegro, Speaker, Arizona House of Representatives  
The Honorable Priya Sundareshan, Minority Leader, Arizona Senate  
The Honorable Oscar De Los Santos, Minority Leader, Arizona House of Representatives  
The Honorable Mark Kelly, U.S. Senate  
The Honorable Ruben Gallego, U.S. Senate  
The Honorable Yassamin Ansari, U.S. House of Representatives  
The Honorable Andy Biggs, U.S. House of Representatives  
The Honorable Juan Ciscomani, U.S. House of Representatives  
The Honorable Eli Crane, U.S. House of Representatives  
The Honorable Paul Gosar, U.S. House of Representatives  
The Honorable Adelita Grijalva, U.S. House of Representatives  
The Honorable Abe Hamadeh, U.S. House of Representatives  
The Honorable David Schweikert, U.S. House of Representatives  
The Honorable Greg Stanton, U.S. House of Representatives

# Attachment

Row	Volume and Chapter/Appendix	Comment	Page Number
1	<b>General Comment</b>	The DEIS appears to imply that the Alternatives with the greatest reductions are the best options to deal with supplies in the system. This is logical if viewed strictly in hydrologic terms, but without a detailed understanding of the tradeoffs to Lower Basin water users in terms of economic impacts to local, state, and regional economies, fails to capture the true cost associated with said reductions.	
2	<b>General Comment</b>	The DEIS does not compare the individual components of each alternative (Powell release mechanism, UIU participation, "Gap Water", etc.), rendering the comparisons and subsequent interpretation misleading at best. Several sensitivity analyses were performed on other elements, yet no such analysis was undertaken for these core components.	
3	<b>General Comment</b>	Any potential for "contribution pools" or "conservation pools" in Lake Powell or the UIUs must be fully analyzed, particularly regarding impacts of size and operational neutrality, and should have been included as part of the analysis in the DEIS.	
4	<b>General Comment, MSCP</b>	While components of Upper Basin programs, such as High Flow Experiments from the Long-Term Experimental and Management Plan, are analyzed in the DEIS, there is a failure to acknowledge that the emphasis in several alternatives on maintaining Lake Powell would have detrimental impacts to resources downstream of Lake Mead, including the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). The program operates as a joint, consensus-driven Habitat Conservation Plan between the Bureau of Reclamation and Lower Basin water users and is funded through cost-sharing. If mandatory cuts are imposed on Lower Basin water users, the program will not be able to continue in its current cooperative state, without modification.	
5	<b>General Comment, Minimum release volumes</b>	The DEIS repeatedly states an annual release from Lake Powell must be equal to or greater than 4.72 maf to maintain the required minimum LTEMP daily release volumes, however, there is no evidence or further explanation for the reader to determine how 4.72 maf was decided or whether or not it is accurate. (Vol 2. A- CRSS Model Documentation). Justification for this minimum release "backstop" must be provided and Compact compliance must be assessed.	
6	<b>Vol 1 - Chapter 2.5.1.1</b>	Despite Reclamation's assertion that the Shortage distribution in the Basic Coordination Alternative would ensure a "minimum flow is available for infrastructure protection and delivery for municipal use by CAP users and other Fourth Priority mainstem entitlement holders in Arizona", no basis for this assumption or calculation nor assessment of the impacts of the minimum flow is provided.	12

Row	Volume and Chapter/Appendix	Comment	Page Number
7	<b>Vol 1 - Chapter 2.6.3.1</b>	No rationale is provided for the additional reduction of one-third of the volume above 1.5 maf of required Lower Basin shortages or the 2:1 conservation ratio between the Upper and Lower Basin. (ADWR assumes the 2:1 was taken from the UDS, but there is no explanation as to why this ratio vs. any other ratio, such as 1:1 is preferable.)	21
8	<b>Vol 1 - Chapter 2.6.4.2</b>	Reclamation states that the reduction of Powell releases down to 4.7 maf are “very effective” in protecting Glen Canyon Dam infrastructure. Therefore, in the Enhanced Coordination Alternative UIU releases were not included or analyzed. This shifts the entire burden of infrastructure protection at GCD to the Lower Basin.	23
9	<b>Vol 1 - Chapter 2.6.4.1</b>	UIU contributions are not explicitly defined. No minimum contribution is determined and are dependent on unspecified hydrologic conditions.	23
10	<b>Vol 1 - Chapter 2.7.2.1</b>	While the previous three-year average natural flow at Lees Ferry gage is a reasonable indicator of current hydrologic conditions, the modeling results are biased by the inclusion of unlikely wet hydrologies. Therefore, the results of this analysis and a potential calibration of the release curve are flawed and are likely to show greater volumes being released than is reasonably expected to occur.	27
11	<b>Vol 1 - Chapter 2.9 - Alternatives Considered but Eliminated from Detailed Analysis</b>	Regarding the One-Dam alternative, which was not advanced “because prioritizing one dam over the other would not yield an integrated, resilient system” (2-37) and would require extensive statutory modifications or amendments. In the case of the first item, protecting elevations in one reservoir over the other (example: Powell Power Pool) has the same effect in prioritization, which as noted such a focus on one dam over the other “would undermine the balanced operations required to meet water delivery, environmental, and legal obligations under the Post 2026 action.” Examples of this prioritization appear in the modeling of the UIU/PIP releases which are done to protect power pool in Powell and not to supplement releases as required by the Compact, in full or part, to Mead.	37
12	<b>Vol 1 - Chapter 3.16 and Vol 3 - Technical Appendix 16</b>	While the DEIS addresses possible economic impacts to agriculture, recreation, and non-market (cultural and existence) values, no discussion is included for uses associated with municipal and industrial diversions. This omission ignores economic impacts for lost water serving junior users in Arizona, California, and Nevada – economic impacts that would dwarf those seen in the agricultural sector. The DEIS does discuss potential impacts in terms of reduced volumes to individual M&I users, but does not produce any follow-on analysis of what the loss of water translates to in terms of economic impact in Arizona, regionally, and nationally.	

Row	Volume and Chapter/Appendix	Comment	Page Number
13	<b>Vol 2 - Appendix B: Modeling Assumptions: Storage and Delivery of Conserved Water</b>	"The No Action and Basic Coordination Alternative only include assumptions for the delivery of Intentionally Created Surplus (ICS) created and stored before January 1, 2027" (B-2). The exclusion of any kind of storage mechanism going forward in the Basic Coordination Alternative is clearly erroneous. As requested in the Lower Basin Alternative (March 4, 2024), the Lower Basin would continue to utilize some kind of storage under any circumstances aside from the contrived No Action Alternative.	2
14	<b>Vol 2 - Appendix B: Modeling Assumptions: Storage and Delivery of Conserved Water</b>	The Lake Powell storage mechanism (where utilized) is modeled as an injection of water into Lake Powell. (B-2) While useful for evaluating the impacts on storage, this approach fails to show the corresponding and necessary impacts to Upper Basin consumptive use that would accompany this change.	2
15	<b>Vol 2 - Appendix B: Modeling Assumptions: Storage and Delivery of Conserved Water</b>	Where modeled (Max Flexibility, Enhanced Coordination), existing ICS is converted to the new storage mechanism for ease of modeling (B-22, B-36). While this may greatly alleviate the complexity of modeling required, it does not adequately represent the deployment and use of those resources, resources that have differing governing rules and potentially less restrictions on use.	22,36
16	<b>Vol 2 - Appendix B: Modeling Assumptions: Storage and Delivery of Conserved Water</b>	The five-year and ten-year phase in periods used to transition pre-2026 storage to operational neutrality (B-36, B-43) are arbitrary and unsupported. The document does not describe the mechanism included to transition to operational neutrality.	36,43
17	<b>Vol 2 - Appendix B: Modeling Assumptions: Storage and Delivery of Conserved Water</b>	With regard to any of the priority shortages implemented by Reclamation within the modeling, the shortage allocation assumes a priority scheme that is likely not universally understood or accepted by all parties in the Lower Basin.	
18	<b>Vol 2 - Appendix C: Shortage Allocation Model</b>	With regard to the Lower Basin shortage regimes utilized for reductions up to 1.5 maf Reclamation has assumed that these volumes attributed to the Lower Basin states will be in play without a seven state agreement in place, or even a final agreement between the lower basin states solidifying this sharing of the reductions. To date the Lower Basin states have not adopted any reduction	
19	<b>Vol 2 - Appendix D: Sensitivity Analysis – Effects of Natural Flow Percentage</b>	The selection of 65% as the percent natural flow (3 year preceding average) is unsupported and arbitrary, as is the sensitivity range or 60% to 70%.	
20	<b>Vol 2 - Appendix D: Sensitivity Analysis – Effects of Natural Flow Percentage</b>	The "gap water" limitation, while corresponding to the same percentage of the maximum Lower Basin reductions to Lower Basin apportionment to the U.S. and Mexico (D-2, FN 1), is nonetheless an incorrect interpretation of the mechanism. No such limitation would be expected to be employed in the Upper Basin in order to deliver the agreed upon percentage.	2

Row	Volume and Chapter/Appendix	Comment	Page Number
21	<b>Vol 2 - Appendix F: Approach to Hydrologic Uncertainty (Subsampling Approach)</b>	Stress Test Hydrology: While acknowledging that the use of the Stress Test ensemble is consistent and provide continuity with previous modeling efforts (F-1), it is also consistently inappropriate for longer-term modeling efforts. It's reliance on the identical sequence of events, merely shifted in time, typically produces a reliable "reset" in hydrologic conditions that appears in every trace. The Stress Test does have utility in short-term planning models, akin to the 5-year time period modeled in CRMMS, but is less useful for longer-term efforts.	1
22	<b>Vol 2 - Appendix F: Approach to Hydrologic Uncertainty (Subsampling Approach)</b>	Stress Test Hydrology: The Stress Test period begins in 1988 and still captures the relatively wet period in the 1990's (reset). If an index sequential ensemble were to be used, it should start with the year 2000 to capture drier conditions likely to be seen in the basin, or as noted in the EIS: "Given the significant decline in reservoir storage that has occurred from 2000-2025, long-term planning in the Basin must wrestle with the potential for such a future." (Page F-3).	3
23	<b>Vol 2 - Appendix F: Approach to Hydrologic Uncertainty (Subsampling Approach)</b>	Paleo Drought Resampled Hydrology (Subsample): It is unclear if the initial sampling (prior to the use of the Kennard Stone algorithm) employed sampling with repetition or sampling without repetition. Previous iterations of this ensemble were with repetition, allowing for the possibility of two (or less likely, more) years of identical hydrologic conditions.	
24	<b>Vol 2 - Appendix G: CRSS Initial Conditions</b>	The reservoir elevations and natural flow calculations are clearly dated and exclude more recent available information. In the case of the reservoirs, Reclamation has utilized projected EOY 2026 elevations from the November 2024 runs (G-1). While understandably there would be a lag due to the construction of the DEIS publication, using projections from models a year and half in the past would seem exceptionally problematic. This is readily observed from the comparison figures G-1 and G-2 in the document. The EIS high initial conditions are outside the bounds of the more recent projections, which take into account the hydrologic conditions and events that have occurred over the last year. The Mid and Low initial conditions are, as noted, within the range of the CRMMS traces but remain far more optimistic than can be expected.	1
25	<b>Vol 2 - Appendix G: CRSS Initial Conditions</b>	While Reclamation downplays the importance of the initial conditions because the DEIS employs the DMDU framework (G-2), that argument ignores the outsize influence the initial conditions have on the results in the near-term (first five years) and the impacts of any proposed operating scheme on the reservoirs and water users under more immediate declining hydrologic conditions.	2

Row	Volume and Chapter/Appendix	Comment	Page Number
26	<b>Vol 2 - Appendix G: CRSS Initial Conditions</b>	With regard to the preceding natural flows at Lees Ferry gage, Reclamation's low, mid, and high estimates rely on dated information and thus exhibit a range of uncertainty outside of the realm of present-day possibilities. Water year 2025 natural flows are known, or can be calculated from a single, historical unregulated inflow as recorded by Reclamation.	
27	<b>Vol 2 - Appendix I: Sensitivity Analysis – Effects of Alternate Upper Basin Demand Scenarios on Operations at Lake Powell and Lake Mead</b>	The statement that under “actual conditions demands are typically shorted every year” (I-3), is overly broad without regard to location or seniority within the Upper Basin. Irrigation water users such as in the Grand Valley typically hold senior rights and/or are located on mainstem water sources. These users typically are not shorted and receive reliable water supplies the vast majority of the time. When hydrologic conditions are poor or dry enough to cause reductions in use to these users, the observed shortages and those calculated within the models are meaningful and realistic. For users higher up in the basin on tributaries with less reliable supplies and/or are relatively junior in priority, this disparity between a desired and unreasonable condition and actual consumptive use is not a shortage, either in reality or as represented in the modeling. A user that historically received scant access to water (2 in 10 years, through July) is not shorted for the lack of water that was never available except for under exceptionally wet conditions.	3
28	<b>Vol 2 - Appendix J: Sensitivity Analysis – Effects of Assumed Parameter Values on 602(a) Storage</b>	While the 602(a) calculation (as employed for determining equalization releases) is only present in the No Action and Basic Coordination Alternatives, there is nothing preventing Reclamation from revisiting and reusing this mechanism in some new proposal for operations. With regard to the 602(a) calculation, there are several issues. First, this should be based on actual consumptive use, not the updated 2016 UCRC Demand Schedule (not-shorted). The pre-shorted demands formerly used, while still above the maximum consumptive use seen in the Upper Basin, were at least closer to reality as a starting point. Second, the Upper Basin demands are expected to increase by about 1 MAF in 2060 (Figure J-1). Assuming expansion of use while expecting declining hydrologic conditions would be inappropriate. At the very least, when calculating the “storage necessary to assure deliveries to the Lower Basin without impairment to the annual consumptive use in the Upper Basin”, no growth in consumptive use should be taken into consideration. Finally, If conditions in the basin continue to deteriorate, then the 602(a) calculation should reflect a shared burden between the basins and be lowered accordingly	

Row	Volume and Chapter/Appendix	Comment	Page Number
29	<b>Vol 2 – Appendix K: Sensitivity Analysis – Effects of Modeling Assumptions with Regard to Future Water Deliveries to Mexico (Description of Methodologies</b>	In method B the reductions to the Upper Basin are calculated as the difference between the Upper Basin's demand schedule and the Upper Basin's modeled use. As is noted elsewhere, this is not a true reduction or shortage but rather a comparison between an aspirational demand assuming full season, full-service use for all users regardless of quality of source or water right and modeled use.	4
30	<b>Vol 2 - Appendix L: Upper Basin Depletion Schedules</b>	As in previous efforts, Reclamation's demand assumptions are based upon liberal irrigated land mapping – irrigated lands need not have consistent access to water, just the possibility of one or two years of irrigation. Likewise, the net irrigation requirement is calculated assuming full season, full-service irrigation. While this is an improvement over the previous approach of using “pre-shortened” demands in terms of representing diversions and depletions on the river, there remain two potential issues. First, given the expansive determination of irrigated lands and net irrigation requirements, the calculation of “shortages” is easily misconstrued. As constructed, the resulting calculated shortages from RiverWare will be greatly overestimated for many of the users. A water user on a tributary that typically only has water for irrigation through July, with only an occasional occurrence of two cuttings will nonetheless be assumed to be under shortage almost all of the time. Likewise, a user that only sees water one year out of ten due to hydrologic availability will be assumed to be shorted nine years, when that water was never there to begin with. Secondly, even assuming there were no issues with the determination and interpretation or the irrigation demands, the next procedural step is to recalculate the natural flows using the new information, along with some reasonable expectation of water availability in the basin. Simply assuming and applying full season, full-service irrigation use (diversion, consumptive use, and return flows) will greatly overestimate the natural flows. While a critical component of any model, this next step is planned for future execution but has not yet occurred.	
31	<b>Vol 2 - Appendix L: Upper Basin Depletion Schedules</b>	As in previous efforts, Reclamation generally assumes that the Upper Basin Demands will continue to grow, independent of conditions on the river. Under future scenarios where river conditions will be at least as dry as they have been in recent history, this shifts the burden of reductions solely to the lower basin.	

Row	Volume and Chapter/Appendix	Comment	Page Number
32	<b>Vol 2 - Appendix L: Upper Basin Depletion Schedules</b>	The one notable exception to the assumption of increased use in the Upper Basin is Arizona demands, which are assumed to decrease in the future. This is despite clear actions and intent that much, if not all of that water would be utilized by tribal nations in Arizona. The assumed decrease of water would seem inconsistent with 1) the assumptions elsewhere in the modeling where full use of entitlements is achieved by 2040 (although as noted in comments regarding Appendix N, assumptions of full use by 2040 are problematic); and 2) the intent and likely use of that water in the immediate future based on the best available information.	
33	<b>Vol 2 - Appendix L: Upper Basin Depletion Schedules</b>	Footnote 2 states "Neither the CRSS baseline demands nor the UCRC 2016 Depletion Demand Schedule include reservoir evaporation undistributed by state from Lake Powell, Flaming Gorge, Blue Mesa, Morrow Point, which averages 520.0 maf per year." This value should be 0.520 maf (UCRC 2016 Depletion Demand Schedule).	1
34	<b>Vol 2 - Appendix N: Lower Division States Depletion Schedules</b>	The assumption that all users will achieve full build-out or full use of entitlement by 2040 (N-1) is based on an arbitrary deadline, ignores any recent historical trends in usage, and the implied growth is not supported by any user specific information or planning documents. This is most easily observed through the water use by tribal users, municipalities, and water users who currently have no use but are assumed to achieve full use by 2040. Even on-river irrigation, at least in the case of Arizona, has remained relatively constant over recent history, yet the depletion schedules ignore this information in their development. This approach invariably decreases the available water to the junior priority users (MWD, SNWA, CAP) and exacerbates and exaggerates the impacts borne by these users even before considering changes to hydrologic conditions. For example, the CAP depletion schedule is reduced from ~1.5 MAF to ~1.3 MAF by 2040 purely through the assumed growth in other users. In addition this approach increases the firming obligations of the United States and the state of Arizona pursuant to the 2004 Arizona Water Settlement Act.	1
35	<b>Vol 2 - Appendix O: Analysis of Lake Powell Infrastructure Protection Releases</b>	The document correctly notes that: "The modeling assumptions regarding operation of the Upper Initial Units presented in this Draft EIS are not intended to, and do not, limit the Secretary's ability to operate these facilities as necessary to respond to hydrologic conditions in accordance with applicable federal law, including operations for the authorized purposes as stated in the 1956 Colorado River Storage Project Act." (O-1) However, there is no assessment with regard to the foreseeable use of the additional participating units, or Reclamation's authorities for operations at those sites.	1

Row	Volume and Chapter/Appendix	Comment	Page Number
36	<b>Vol 3 - Technical Appendix 5: Geomorphology and Sediment</b>	The choice to include experimental flows such as HFEs is inappropriate when analyzing annual operations. HFEs are an experimental action that has compliance under the Glen Canyon Dam specific Long-Term Experimental and Management Plan EIS and SEIS. Analysis of sediment resources and the ability to conduct HFEs in the Grand Canyon stretch was not analyzed or included in the previous 2007 Interim Guidelines EIS or the 2024 SEIS. If Reclamation maintains the analysis with the HFE discussion, then the operation of the UIUs, including the Flaming Gorge Work Group should also be included given the analogous work group structure in each Basin.	
37	<b>Vol 3 - Technical Appendix 6: Water Quality 6.2.1</b>	The impacts to salinity are “analyzed as it relates to the salinity criteria set by the Colorado River Salinity Control Forum.” While comparing modeled salinity values from each alternative is valuable, each alternative should also be compared to a “baseline”. Recognizing that the Continuing Current Strategies (CCS) is a not a perfect baseline, it would be beneficial to see how the alternatives compare to this alternative to fully analyze the impacts.	9
38	<b>Vol 3 - Technical Appendix 6: Water Quality 6.2.1</b>	Salinity impacts should be evaluated in terms of economic consequences. This analysis could include the use of USBR’s Salinity Economic Impact Model (SEIM) to understand the economic impact of salinity changes due to each alternative. This analysis may be more suited for TA 16 -socioeconomics. However, Section TA 6.2.1 should at least include a reference to the related analysis in those sections.	9
39	<b>Vol 3 - Technical Appendix 15: Dams and Electrical Power Resources</b>	While mentioned in terms of Glen Canyon’s contractual obligations for “black start” requirements (TA 15-18), no analysis is offered with regard to impacts on the Palo Verde Nuclear Generating Station. The capacity and generation of this facility dwarfs that of Glen Canyon Dam and relies on reclaimed water from several Phoenix metropolitan area cities for cooling. No discussion appears within the DEIS as to the potential impacts on electrical generation at the Palo Verde Generating Station.	18
40	<b>Vol 3 - Technical Appendix 15: Dams and Electrical Power Resources</b>	The importance of the Glen Canyon and the other Colorado River facilities for addressing resource imbalances or outages is overstated, given the additional resources typically at the disposal of electrical providers or end users, whether through peaking services from natural gas generation or other natural resource/battery combinations. Additional relief can be found through market purchases, although that is obviously not ideal.	

Row	Volume and Chapter/Appendix	Comment	Page Number
41	<b>Vol 3 - Technical Appendix 15: Dams and Electrical Power Resources</b>	With regard to potentially affected entities, some of the most dependent utilities are identified, at least in terms of CRSP hydropower, along with the acknowledgement that for many of WAPA's customers, power from the Colorado River dams make up only a small fraction of their portfolio. Despite the relatively small footprint in many of the end users, hydropower is given outsize representation within the DEIS.	
42	<b>Vol 3 - Technical Appendix 15: Dams and Electrical Power Resources</b>	The discussion on impacts is generally limited to the river corridor (TA 15-21) – specifically the ability of the dams to generate power. These discussions are specifically limited to the dams ability to generate power and not the economic impact of that lost power to utilities. The section on potential impacts to rates and market value of electricity (outside of the	21,54
43	<b>General Comment and Vol 3 - Technical Appendix 15: Dams and Electrical Power Resources</b>	Reclamation briefly states that a plan to refurbish or replace the ROW's hollow jet valves are in progress (TA 15, pg. 5-6), but does not provide timelines, considered additional actions, or any details that ensure Lower Basin water users of Reclamation's ability to maintain water deliveries. Reclamation does not clearly identify whether infrastructure concerns are focused on the ability to deliver water or produce hydropower. Solutions are dependent on the primary goal of those actions, and should be clearly defined for success.	5-6
44	<b>Vol 3 - Technical Appendix 17: Population and Land Use</b>	As with Technical Appendix 16, the DEIS only discusses potential impacts in terms of reduced volumes to individual M&I users, but does not produce any follow on analysis of what the loss of water translates to in terms of economic impact.	
45	<b>Vol 3 - Technical Appendix 18: Indian Trust Assets</b>	The methodology for determining robustness among the alternatives for tribal water deliveries is flawed. These metrics do not take into account the magnitude of the dead-pool reductions, nor is it explained how occurrences are tallied. Because dead-pool releases are determined on a monthly timescale, it is unclear if a year that has one month with a dead-pool release is counted differently than a year with 10 months of dead-pool releases. Furthermore, the magnitude of dead-pool reductions is critical as is how they are distributed among users . Appendix A pg. 35 details how dead-pool reductions are shared among priority groups, therefore it would be appropriate to assess the relative magnitude and frequency of dead-pool reductions to each of the priority groups under these scenarios to fully weigh the relative robustness of each alternative.	12