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January 9th, 2020

Mr. Rick Baxter  
Program Manager  
Bureau of Reclamation  
Provo Area Office  
302 East Lakeview Parkway  
Provo, UT 84606

Also sent via email to [lpp@usbr.gov](mailto:lpp@usbr.gov).

Re: NEPA Scoping Comments for the Lake Powell Pipeline Project

Dear Mr. Baxter,

Thank you for the opportunity for members of the public to provide comments on the scope of the Environmental Impact Statement (EIS) for the proposed Lake Powell Pipeline Project (LPP Project, or Project). We appreciate your serious consideration of the information and concerns expressed herein which indicate that this Project has the potential to have cumulative impacts to communities and the environment living in the Colorado River Basin. Living Rivers and other concerned organizations submit the following scoping comments which identify the range of significant potential impacts associated with the LPP Project, and urge you to fully evaluate them, and alternatives to the project that would avoid those impacts, in the context of your NEPA review.

Additionally, we urge Reclamation to put completion of this EIS on hold until crucial agreements and other governmental actions are completed that will significantly clarify the amount of water available for the Lake Powell Pipeline and Green River Block Water Rights Exchange Contract. These critical agreements and actions include the Ute Water Compact and the re-consultation of the 2007 Interim Guidelines, as well as preparation of a Programmatic EIS done on the newly signed Upper Basin Drought Contingency Plan.

## **I. Introduction**

The LPP Project proposes to move up to 82,249 acre-feet per year (AFY) of water from Lake Powell through northern Arizona and southern Utah to Sand Hollow Reservoir to be used by the county seat of Washington County, St. George, Utah. Additionally, up to 4,000 AFY of water will also be transported for use in Kane County near the county seat of Kanab.

A contract between the State of Utah and the Bureau of Reclamation (Reclamation) will outline the agreements on water released from Flaming Gorge Dam, operated by Reclamation, for use by the LPP Project. The releases from Flaming Gorge will be diverted from Lake Powell at a proposed pumping station near Glen Canyon Dam in the state of Arizona. The Project will involve the construction of a 69-inch, 140-mile pipeline from Lake Powell to Sand Hollow Reservoir in Washington County. This water conveyance system includes pump stations to lift the water up-and-over watershed divides and will generate hydropower electricity when the water in the pipeline falls to lower elevations.

The Colorado River Basin provides water for nearly 40 million people in seven US States as well as two Mexican States. It supplies water to over 5 million acres of agricultural land and supports a thriving recreation economy, as well as one of the most unique and beautiful ecosystems in the world. Twenty-nine federally recognized tribes also rely on the waters of the Colorado River. In developing this EIS, we encourage Reclamation to take the long view. As you are well aware, this river is a crucial resource for all who live in and on the edges of the majestic Colorado River Basin. Why would the economic growth of St. George, a community that has never relied on the river before, be considered more important than maintaining the economies of dozens of cities that already rely on the highly sought waters of the Colorado River? The continued growth of St. George is not in question, with or without the Lake Powell Pipeline, but the continued existence of many western farmers are actually on the line, even in Utah. Every time we take water out of the river, we are taking from someone or something that relies on that same water. The Colorado River is all used up, our “growth” and “prosperity” has already led to the decimation of the delta fishing community in Mexico. The sandbars, river channels, and floodplains are changing, invasive plants and animals encroach with diminished flows and waves of rapids disappear as exposed boulders take their place.

The risk of both Lake Powell and Lake Mead dropping below the point of power generation in the next few years is significant. We have yet to adapt to the existing infrastructure, water delivery schedules, and the hydrology of this changing time-period. Adding the LPP Project to this already strained system is unneeded and cannot be sustained from either an environmental or an economic perspective. For example, when the Central Arizona Project was unwisely pushed through and financed, Arizona agreed to take a junior water right. Today, Arizona is reckoning with that choice, and it has repercussions around the entire Colorado River Basin. The people who have become dependent on that water could lose their lifeline. Economies will suffer. It is not responsible to knowingly repeat the same mistake again. The Lake Powell Pipeline has very junior water rights in Utah. Considering all of this, the cost is too high for residents of Washington and Kane Counties and Utah taxpayers to bear for unsecured water rights in this politically tumultuous system.

As stewards of the Colorado River, we understand the multiple layers of policies that come into play in the management of this valuable lifeline and the rippling repercussions that they will have. On behalf of the members and partners of Living Rivers, Colorado Riverkeeper, and Conserve Southwestern Utah, we submit the following comments on the scope of the

NEPA-mandated environmental review of this project. In support of a comprehensive environmental review of the LPP Project, we detail some of the major impacts and issues associated with it, including expanding aridification, over-appropriation, drought contingency plans, re-consultation of Interim Guidelines<sup>1</sup>, and the economic and social justice dynamics at play. We urge Reclamation to analyze these bigger concepts in developing a rigorous and robust EIS.

The decisions we make in the critical years to come will hold incredible importance for our future here in these deserts. Your agency, and the other Cooperating Agencies, must begin to acknowledge and adapt to the unique challenges of our time. If you do prepare a comprehensive and forward looking EIS, consistent with our comments below, we are confident that you will conclude that the Project is not in the public's best interest, and that the Lake Powell Pipeline should not be approved.

### **A. History of Organizational Involvement**

Living Rivers is a nonprofit organization based along the Colorado River in Moab, Utah. Moab is the county seat of Grand County, the western boundary of the county is the Green River. Living Rivers has approximately 1,200 members. Since its inception in 2000, Living Rivers has been engaged in advocating for responsible management of the Colorado River system. Living Rivers was designated as the official Colorado Riverkeeper in 2002 by the Waterkeeper Alliance, comprised of more than 350 on-the-water advocates who patrol and protect more than 2.7 million square miles of rivers, lakes and coastlines on 6 continents. Many Waterkeepers in the Western US depend on the scarce water resources of the Colorado River basin. Living Rivers' trustees, partners, and members live, work, recreate and rely on the waters of the Green and Colorado Rivers.

Conserve Southwest Utah (CSU) is based in St. George, UT. They started in 2006 as Citizens for Dixie's Future. CSU is a coalition of citizens advocating for conservation of the area's natural and cultural resources and for the Smart Growth principles that enable conservation for the benefit of present and future generations. They have been focusing on the LPP Project since their inception.

Waterkeeper Alliance, Inc. is a global nonprofit environmental organization dedicated to protecting and restoring water quality to ensure the world's waters are drinkable, fishable, and swimmable. Waterkeeper Alliance is comprised of more than 300 Waterkeeper Member Organizations and Affiliates working in 44 countries on 6 continents, protecting over 2.5 million square miles of watersheds. In the United States, Waterkeeper Alliance represents the interests of approximately 175 U.S. Waterkeeper Member Organizations and Affiliates, which include Living Rivers and other organizations in Utah, as well as in the Colorado River Basin, to preserve and protect waterways. Waterkeeper also represents the collective interests of over

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<sup>1</sup> The Record of Decision on the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead is referred to in this text as "Interim Guidelines."

10,000 individual supporting members that live, work, and recreate in and near waterways across the nation, including in Utah and the Colorado River Basin.

The mission of Save The Colorado is to protect and restore the Colorado River and its tributaries from the source to the sea. Save The Colorado focuses on fighting irresponsible water projects, supporting alternatives to dams and diversions, fighting and adapting to climate change, supporting river and fish species restoration, and removing deadbeat dams. Save The Colorado has thousands of supporters throughout the Southwest U.S. from Denver to Los Angeles and beyond.

WildEarth Guardians is a regional non-profit organization dedicated to protecting and restoring the wildlife, wild places, wild rivers, and health of the American West. Guardians has over 275,000 members and supporters nationwide and maintains offices in Santa Fe, Denver, Missoula, Portland, Seattle, and Tucson. For over 30 years, Guardians has worked to protect and restore flows in western rivers, advocated for western water policy reform, ensured protection of imperiled fish, wildlife and plants, and fought to undam and restore healthy and sustainable aquatic and riparian ecosystems for future generations. Recently, Guardians and our allies filed federal court litigation challenging the permitting of two water development projects in the Upper Colorado River Basin including the Windy Gap Firming Project and Moffat Collection System Project. In addition, Guardians recently intervened in the preliminary permit applications for the Navajo Nation Salt Trail Canyon Pumped Storage Project (No. 14992-000) and the Navajo Nation Little Colorado River Pumped Storage Project (No. 14994-000). Guardians has devoted significant resources over the past 30 years to advocate for living rivers, combat the extinction crisis, and promote climate resilience.

The Center for Biological Diversity (“The Center”) is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to protect important waterways in order to maintain biological diversity, our environment, and public health. The Center has over one million members and activists, including those living in Utah who rely on the Colorado River and have visited the potentially impacted public lands and waterways for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the LPP Project.

The Lake Powell Pipeline Coalition (LPP Coalition), Conserve Southwestern Utah, the Waterkeeper Alliance, WildEarth Guardians, Living Rivers and Colorado Riverkeeper have a long history of involvement in the public review process surrounding the permitting of the Lake Powell Pipeline and our timely correspondence with FERC, Reclamation, and Cooperating

Agencies are outlined in the following table and attached as Appendix A for inclusion in the administrative record of the Project.<sup>2</sup>

<b>Living Rivers: Lake Powell Pipeline Admin Record</b>		
<b>Date</b>	<b>Comments or Intervention</b>	<b>Archival Hyperlink</b>
1/2/08	Motion to Intervene	<a href="#">LPP Coalition</a>
7/7/08	Initial Scoping	<a href="#">Living Rivers</a>
7/7/08	Initial Scoping (Scoping Document 1)	<a href="#">LPP Coalition</a>
11/19/08	Initial Scoping (Scoping Document 2)	<a href="#">LPP Coalition</a>
1/5/09	Revised Study Plan	<a href="#">LPP Coalition</a>
5/6/11	Study Reports	<a href="#">LPP Coalition</a>
8/3/18	BLM AZ Strip Amended RMP	<a href="#">Living Rivers</a>
11/2/18	Green River Block EA	<a href="#">Living Rivers</a>
11/16/18	Motion to Intervene	<a href="#">Living Rivers</a>
11/19/18	NEPA Scoping Comments submitted to FERC	<a href="#">Living Rivers et al.</a>
2/18/19	404 Clean Water Act	<a href="#">Living Rivers et al.</a>

From 2000 to 2005, Living Rivers, Colorado Riverkeeper and Center for Biological Diversity participated in the National Environmental Policy Act (NEPA) process for an EIS in regards to re-operations at Flaming Gorge Dam.<sup>3</sup> We participated fully in the NEPA process for the 2007 Interim Guidelines EIS.<sup>4</sup> In 2010, we provided comments on the Green River Pumping Project Environmental Assessment (EA).<sup>5</sup> Since 2012, we jointly participated in the EIS for Long Term Experimental Management Plan for operations at Glen Canyon Dam.<sup>6</sup> We also participated in

<sup>2</sup> All other documents cited have also been attached via email to [lpp@usbr.gov](mailto:lpp@usbr.gov) by section for inclusion in the administrative record. If duplicate citations exist, the documents have only been included once in the section they first appear.

<sup>3</sup> Living Rivers. 2000. Scoping Comments on EIS for Flaming Gorge Dam. Accessed at: <http://www.livingrivers.org/archives/article.cfm?NewsID=90>

<sup>4</sup> Living Rivers. 2007. Comments on Draft EIS for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. Accessed at: [http://www.livingrivers.org/pdfs/LR\\_Shortage\\_DEIS.pdf](http://www.livingrivers.org/pdfs/LR_Shortage_DEIS.pdf)

<sup>5</sup> Living Rivers. 2010. Comments on the Draft EA and Biological Assessment for the Green River Pumping Project. Accessed at: <http://www.livingrivers.org/pdfs/LRletterGreenRiverPumpingProject.pdf>

<sup>6</sup> Living Rivers 2012. Scoping comments for LTEMP EIS on operations of Glen Canyon Dam. Accessed at: <http://www.riversimulator.org/Resources/NGO/LTEMP/LTEMPeisCommentsLivingRivers31Jan2012.pdf>

the 2012 Water Supply and Demand Study which was authorized by the 2009 SECURE Water Act.<sup>7</sup>

### **B. Historical Background: Colorado River Compact of 1922 & Law of the River**

- The Colorado River Basin was divided into the Upper and Lower Basins, one mile below Lee Ferry, AZ; now 16 river miles below Glen Canyon Dam.<sup>8</sup>
- When the Colorado River Compact was signed, after an especially wet time in the early 20th century, the amount of water flowing past the Compact Point near Lee Ferry, 16 river miles below Lake Powell, was assumed to be 16.4 million acre-feet per year (MAFY) on average.
- The Upper Basin is obligated to deliver 75 MAFY every 10 years to the Lower Basin division (75/10 provision).<sup>9</sup>
- The Upper and Lower Basin are each required to deliver half (750,000 acre-feet, each) of Mexico's 1.5 MAFY allocation.<sup>10</sup>
- The Lower Basin states may share surplus water supplies of 1 MAFY.
- Federal Reserve Water Rights are allocated in the state(s) of origin.
- Utah is entitled to 23% of the Upper Basin's share, after ensuring delivery obligations are met to the Lower Basin and Mexico.<sup>11</sup>
- Curtailment of the use of water (Compact Call) by the States of the Upper Division may be necessary to comply with the 75/10 provision of the 1922 Compact.<sup>12</sup>
- In case of a "Compact Call," all Upper Basin states will be shorted, based on the proportion of water used the year before and compared to the total usage in the Upper Basin.<sup>13</sup>

### **C. History of Utah's Ultimate Phase Water Rights**

The water rights that would fill the Lake Powell Pipeline were originally held in Flaming Gorge Reservoir by Reclamation as part of the "Ultimate Phase" of the Central Utah Project. This water was initially intended to supply the Uintah Unit (partially completed) and the Ute Indian Unit (never completed) of the Central Utah Project. In 1992, Congress signed the Central Utah Project Completion Act which deauthorized the Ultimate Phase, compensated the Northern Ute Tribe for construction projects not completed by the United States, and encouraged the tribe to quantify their water rights for future settlement and development. Thus far, a Ute Water

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<sup>7</sup> Living Rivers. 2013. Comments on the Colorado River Basin Supply and Demand Study. Accessed at: <http://www.livingrivers.org/pdfs/LivingRiversCBDComments2013.pdf>

<sup>8</sup> Colorado River Compact (1922)

<sup>9</sup> Ibid.

<sup>10</sup> Treaty with Mexico (1944)

<sup>11</sup> Upper Colorado River Basin Compact (1948)

<sup>12</sup> Ibid.

<sup>13</sup> Ibid. Article IV (c).

Compact has not been ratified by the Northern Ute Tribe and their senior water rights are still pending.

Reclamation held the Ultimate Phase water rights until 1996, when it transferred those rights to the Utah Board of Water Resources (UBWR) who, instead of granting them to the Northern Ute Tribe as originally intended, opened these rights up for development in Utah. Some water has been put to use by private users along the Green River and in the Colorado River watershed in Grand County and San Juan County. Some of the rights are set aside for public water suppliers along the main rivers. These rights are collectively referred to as the Green River Block water rights. All of the undeveloped and unclaimed rights from the Ultimate Phase have transferred back to the UBWR, and they are planning on using them to supply the Lake Powell Pipeline for consumptive use in Washington and Kane Counties. According to Reclamation, all of the undeveloped Ultimate Phase water rights were supposed to lapse on October 6th, 2009. Regardless of this, the Utah Division of Water Rights has granted extensions of time to put the water to beneficial use to all the public water suppliers holding undeveloped Ultimate Phase water rights.

## II. Summary of Comments and Concerns

### A. Reclamation should put this EIS on hold

- We urge Reclamation to put completion of this EIS on hold until crucial agreements and other governmental actions are completed that will significantly clarify the amount of water available for the Lake Powell Pipeline and Green River Block Water Rights Exchange Contract.<sup>14</sup> These critical agreements and actions include the Ute Water Compact and the re-consultation of the 2007 Interim Guidelines, as well as preparation of a Programmatic EIS done on the newly signed Upper Basin Drought Contingency Plan ([Section 3.G.](#), [Section 3.C.](#), [Section 3.D.](#)).
- The Hydrological Determination completed by Reclamation in 2007 is no longer relevant to the Upper Basin States and must be revised using time dependent, forward-looking data in order to understand Upper Basin water availability ([Section 3.A.](#)).
- NEPA requires a programmatic EIS on the Upper Basin Drought Contingency Plan (DCP), specifically the Drought Response Operations of Upper Basin Reservoirs, before this EIS can be completed ([Section 3.C.](#)).
- Re-consultation of 2007 Interim Guidelines will begin by 2021 and will very likely affect the 50-year feasibility of the LPP Project ([Section 3.D.](#)).

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<sup>14</sup> Living Rivers submitted timely comments on the GRB EA. Living Rivers et al. Comments for Green River Block Water Rights Exchange Contract. 2018. Accessed at <http://www.riversimulator.org/Resources/USBR/ExchangeContracts/LRcommentsDEAgrbWEC2018Nov.pdf>

- The EIS should be put on hold until it can be determined that Utah has the rights to sufficient water in tributaries to be the subject of an exchange, and that those rights are tied to actual wet water ([Section 3.F.](#)).
- This EIS must be put on hold until the pre-compact Federal Reserved Water Rights claims of the Tribes in Utah are settled ([Section 3.G.](#)).

#### **B. Potential impacts that need to be addressed in the EIS**

- Climate change and continued aridification of the Colorado River Basin must be analyzed in the EIS as it relates to current and future water supply ([Section 3.A.](#), [Section 3.B.](#)).
- The EIS must not rely solely on the Record of Decision on Flaming Gorge Dam Operations in 2006 to assess water availability for the LPP Project ([Section 3.A.](#)).
- The cumulative effects of all proposed and yet undeveloped Upper Basin depletions, including the LPP Project, need to be modeled and evaluated in this EIS ([Section 3.B.](#)).
- The State of Utah has vastly over-appropriated water rights to the Colorado River, putting water users in jeopardy ([Section 3.E.](#)).
- Because the consumptive use of water for the Lake Powell Pipeline will put current water users with junior water rights in jeopardy of losing their water rights, given ongoing aridification, the EIS must analyze the economic and cultural impact that a Compact Call or a curtailment, made necessary as a result of the water depletion effects of the LPP Project would have on other water users in Utah's Colorado River Basin ([Section 3.E.](#)).
- The EIS should require an in-depth look at tributary flows into the Green River to determine how they may be impacted by climate change and over-appropriation ([Section 3.F.](#)).
- Reclamation must clarify whether releases from Flaming Gorge Dam, in the Upper Basin Division, and conveyed to Washington County, Utah, which is in the Lower Basin, is an appropriate use under the 1922 Colorado River Compact and associated Law of the River ([Section 3.H.](#)).
- The EIS should fully explore alternatives to the Lake Powell Pipeline Project, including conservation and alternative sources of water in the region that could obviate the need for the Project ([Section 3.I.](#)).
- The Project budget must outline the costs and/or impact of treating Colorado River water, or diluting Colorado River water with local groundwater, and upgrading municipal plumbing systems to deal with introducing chemically unique Colorado River water into the public utility lines in Washington County ([Section 3.J.](#)).
- The mitigation of invasive quagga mussels that have infested Lake Powell must be assessed for the entire conveyance system, and return flows to Lake Mead via the Virgin River, including the economic impacts of this problem ([Section 3.K.](#)).
- The EIS must fully evaluate the two alternative pipeline routes, in consultation with the Kaibab Paiute Tribe, to identify a route that would not impact sacred sites, burials and other cultural values ([Section 3.L.](#)).



- Further industrialization from pipeline infrastructure along the route will diminish the recreational value of the scenic area ([Section 3.M.](#)).
- EIS must examine impacts to aesthetic values for residents near Sand Hollow Reservoir ([Section 3.N.](#)).
- The EIS must analyze the impact that use of Project water would have on hydropower production at Glen Canyon Dam ([Section 3.O.](#)).
- The EIS should examine the effects of changes to downstream water quality as reservoir levels at Lake Powell approach the top of the inactive pool and result in the remobilization of stored sediment deposits in the upper reaches of Lake Powell ([Section 3.P.](#)).
- The EIS must address impacts of the LPP Project and associated water withdrawal on Colorado River health and endangered species. This would include the ecosystem of the Virgin River ([Section 3.P.](#)).
- The State of Utah needs to clarify how much interest will be required for the financing of loans for the LPP Project before we can understand the financial feasibility of the Project and if it is in the public's best interest ([Section 3.Q.](#)).
- Reclamation should require UBWR to develop a more accurate and complete project budget and submit it to the public for review ([Section 3.Q.](#)).

### **III. Narrative of Potential Impacts and Concerns that Must Be Addressed in the LPP Project EIS**

#### **A. Climate change and continued aridification of the Colorado River Basin must be analyzed in the EIS as it relates to water supply.**

Climate change in the Colorado River Basin is already taking a toll on our water supply. This can be seen in a myriad of ways: from the first ever curtailment of water users on the Yampa River in 2018 to the scrambling of the Colorado River Basin states to update and adopt Drought Contingency Plans (DCPs) in 2019.<sup>15,16</sup> Lake Powell now sits 52% full and Lake Mead, 40%.<sup>17</sup> Data used by Reclamation for Glen Canyon Dam operations is useful in understanding the magnitude of the situation,

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<sup>15</sup> Hasenbeck, Eleanor. Sept. 5, 2018. Steamboat Pilot and Today. "Yampa River is placed on call for 1st time ever." Accessed at

<https://www.steamboatpilot.com/news/yampa-river-is-placed-on-call-for-1st-time-ever/>

<sup>16</sup> Romeo, Jonathan. Oct. 12, 2018. The Journal. "Drought plan aims to curtail water loss at Lake Powell, Lake Mead." Accessed at

<https://the-journal.com/articles/113368-drought-plan-aims-to-curtail-water-loss-at-lake-powell-lake-mead>

<sup>17</sup> James, Ian. Dec. 14, 2019. Arizona Republic. "Feds will review Colorado River rules, Interior boss says, with an eye on long-term risks." Accessed at

<https://www.azcentral.com/story/news/local/arizona-environment/2019/12/14/federal-government-review-colorado-river-rules-2020/2641339001/>

"During the 20-year period 2000 to 2019 . . . the unregulated inflow to Lake Powell, which is a good measure of hydrologic conditions in the Colorado River Basin, was above average in only 4 out of the past 19 years. The period 2000-2019 is the lowest 20-year period since the closure of Glen Canyon Dam in 1963, with an average unregulated inflow of 8.76 maf, or 81 percent of the 30-year average (1981-2010). . . . In water year 2018 unregulated inflow volume to Lake Powell was 4.6 maf (43 percent of average), the third driest year on record above 2002 and 1977. Under the current most probable forecast, the total water year 2020 unregulated inflow to Lake Powell is projected to be 8.3 maf (77 percent of average)."<sup>18</sup>

Currently, the Upper Basin Division State's individual allocations of water are based on out-dated models that do not factor in the impact that climate change is having on hydrology. The Upper Colorado River Commission and Reclamation are using these inflated numbers to then grant state water rights, like the ones held for the Project. The most recent 2007 Hydrological Determination done by Reclamation, which explains the availability of water for consumptive use in the states of the Upper Basin, was based off the last 100-years of records and doesn't account for modern aridification.<sup>19</sup> This report states that there is 5.76 MAFY of water available to be used in the Upper Basin and assumes 7.5 MAFY for the Lower Basin and a 1.5 MAFY for Mexico for a total of 14.76 MAFY. Adding 1.2 MAFY for incidental evaporation and other losses in the Lower Basin (the "structural deficit") brings the total demand to 15.92 MAFY.

Stream flows in the current 20 year Millennial Drought are well below 15.92 MAFY. In a report published in 2017, Udall and Overpeck find, "Between the start of the drought in 2000 and the end of 2014, our analysis period, annual flow reductions averaged 19.3% below the 1906–1999 normal period."<sup>20</sup> Naturalized flow near Lee Ferry between 2000 and 2014 was closer to 12 MAFY. Holding all else steady (7.5 MAFY for the Lower Basin, 1.5 MAFY for Mexico) and assuming the Lower Basin structural deficit is solved by the DCP, that would leave around 3 MAFY to divide between the Upper Basin Division States if they were going to meet the downstream delivery requirements in a situation of ongoing aridification. For 2001-2018, the average consumptive use of the Upper Basin, including reservoir evaporation and system losses, was about to 4.5 MAFY,<sup>21</sup> leading to the declining reservoir levels that we've seen.

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<sup>18</sup> Bureau of Reclamation, Upper Colorado Region. "Glen Canyon Dam" Accessed on Dec 17, 2019 at <https://www.usbr.gov/uc/water/crsp/cs/gcd.html>

<sup>19</sup> Bureau of Reclamation. 2007 Hydrologic Determination. Accessed at <http://www.riversimulator.org/Resources/USBR/2007HydrologicDetermination.pdf>

<sup>20</sup> Udall, B. and J. Overpeck (2017), The twenty-first century Colorado River hot drought and implications for the future, *Water Resource. Res.*, 53, 2404– 2418, doi:10.1002/2016WR019638.

<sup>21</sup> Reclamation. Provisional, Upper Colorado River Basin, Consumptive Uses and Losses Report, 2001-2005), p. iv, accessed on Dec. 20, 2019 and available at: <https://www.usbr.gov/uc/envdocs/reports/ColoradoRiverSystemConsumptiveUsesandLossesReports/ColoradoRiverBasinConsumptiveUsesandLossesReport-2001-05.pdf>; Reclamation, Provisional, Upper Colorado River Basin, Consumptive Uses and Losses Report, 2006-2010, p. v, accessed on Dec. 20, 2019 and available at:

In their 2017 report, Udall and Overpeck go on to say that,

“[C]ontinued business-as-usual warming will drive temperature-induced declines in river flow, conservatively 20% by midcentury and 35% by end-century, with support for losses exceeding 30% at midcentury and 55% at end-century.”<sup>22</sup>

As presented here, there is a disconnect between how Reclamation and Upper Division states account for state shares of the Colorado River and current and future hydrology. The only reason this system of division has worked so long is that the dams along the Colorado River are capable of storing huge amounts of water, but we’ve used up that surplus and are unlikely to see it restored in the future, except sporadically, which is a situation that is not reliable in any planning context.

Specific recommendations for including climate change in the scope of the EIS:

- The EIS must use modeling that takes climate change into account. Models that are based on the last 100-years of records are not adequate for this. Models should instead be based off relevant peer-reviewed science about current and future climate impacts in the Colorado River Basin and include the “stress test” hydrology described in [Section 3.B.](#)<sup>23</sup>
- The EIS must not rely solely on the Record of Decision on Flaming Gorge Dam Operations in 2006 to assess water availability for the LPP Project. Similar modeling used to develop the 2007 Interim Guidelines has completely failed to predict the current

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<https://www.usbr.gov/uc/envdocs/reports/ColoradoRiverSystemConsumptiveUsesandLossesReports/Provisional-UpperColoradoRiverBasinConsumptiveUsesandLossesReport-2006-2010prov.pdf>; Reclamation, Provisional, Upper Colorado River Basin, Consumptive Uses and Losses Report, 2011- 2015, p. vii, accessed on Dec. 20, 2019 and available at:

<https://www.usbr.gov/uc/envdocs/reports/ColoradoRiverSystemConsumptiveUsesandLossesReports/20191000-ProvisionalUpperColoradoRiverBasin2011-2015-CULReport-508-UCRO.pdf>; Reclamation, Provisional, Upper Colorado River Basin, Consumptive Uses and Losses Report, 2016- 2018), p. vii, accessed on Dec. 20, 2019 and available at:

<https://www.usbr.gov/uc/envdocs/reports/ColoradoRiverSystemConsumptiveUsesandLossesReports/20190800-ProvisionalUpperColoradoRiverBasin2016-2020-CULReport-508-UCRO.pdf>

<sup>22</sup> Udall, B. and J. Overpeck. 2007. The twenty-first century Colorado River hot drought and implications for the future, *Water Resource. Res.*, 53, 2404– 2418, doi:10.1002/2016WR019638.

<sup>23</sup> A few articles on climate change and the Colorado River Basin to consider:

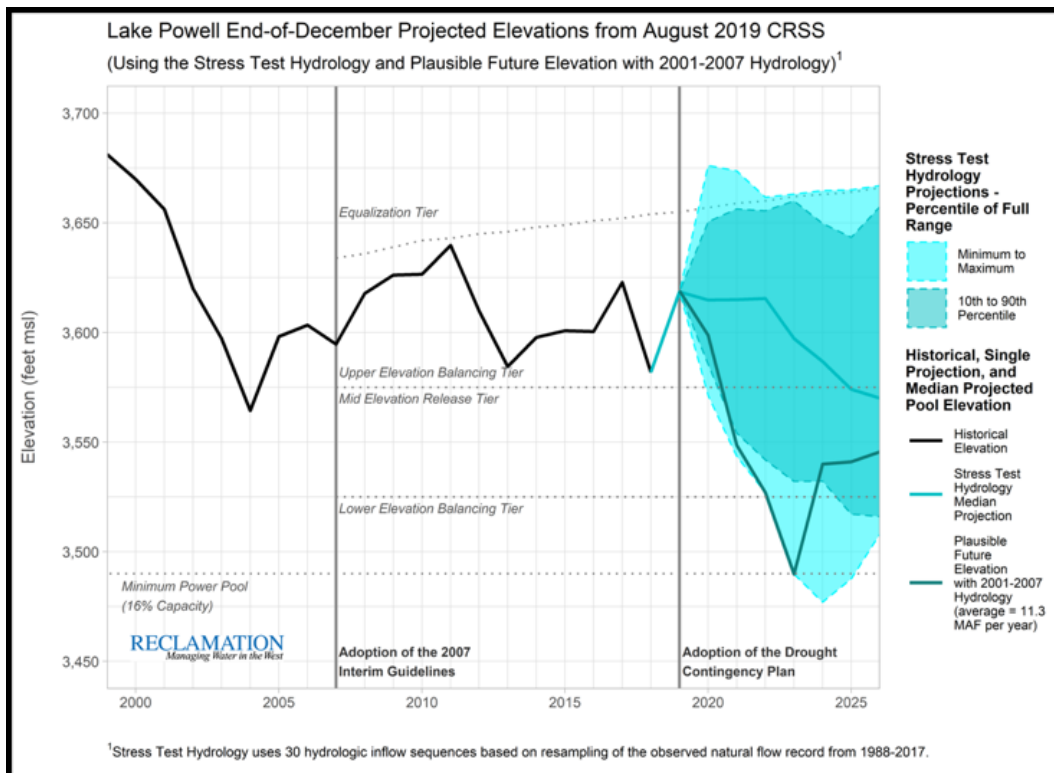
- Xiao, M., Udall, B., Lettenmaier, P. (2018,. On the causes of declining Colorado River streamflows. *American Geophysical Union*. p. 10-12, 39. doi: 10.1029/2018WR023153.
- Barnett, Tim and David Pierce (2009), Sustainable water deliveries from the Colorado River in a changing climate. *PNAS*. May 5, 2009. 106 (18) 7334-7338; <https://doi.org/10.1073/pnas.0812762106>
- Reclamation. 2017. Colorado River Basin Water Supply and Demand Study. Executive Summary. [https://www.usbr.gov/watersmart/bsp/docs/finalreport/ColoradoRiver/CRBS\\_Executive\\_Summary\\_FINAL.pdf](https://www.usbr.gov/watersmart/bsp/docs/finalreport/ColoradoRiver/CRBS_Executive_Summary_FINAL.pdf)

risk for shortages we face in Lakes Mead and Powell, leading to the need to develop emergency DCPs in both basins that will likely impact dam operations basin-wide.

- The Hydrological Determination completed by Reclamation in 2007 is no longer relevant to the Upper Basin States and must be revised using forward-looking data in order to understand the impact that the Project will have on basin-wide water availability.<sup>24</sup>

**B. The cumulative effects of all proposed and yet undeveloped Upper Basin depletions, including the LPP Project, need to be evaluated in this EIS.**

Lake Powell (and Lake Mead) are at risk of dropping to critically low levels as soon as 2026 as seen by the graph entitled “Lake Powell End-of-December Projected Elevations from August 2019 CRSS” produced by Reclamation.<sup>25</sup> This graph looks at the “stress-test” hydrology based on flows from recent history (1988-2017) which many scientists agree more accurately reflect our current state than “full hydrology” which includes an abnormally wet time early in the historical record. It also includes a line demonstrating what “Plausible Future Elevations” will be with a repeat of 2001-2007 hydrology. As this figure illustrates, there is a significant chance that water levels in Lake Powell will drop below the target elevation of 3525’ outlined by the Upper Basin DCP by 2026.



<sup>24</sup> 2007 Hydrologic Determination: Available at: <http://www.riversimulator.org/Resources/USBR/2007HydrologicDetermination.pdf>

<sup>25</sup> Reclamation, 2019, Research and Modeling Group.

In a study done for the water users of Western Colorado that looks beyond 2026, Hydros Consulting found that when using the “stress test” period of 1988-2015 during modeling, “the likelihood of Lake Powell dropping below 3,525 feet at some point in the next 25 years is ~39%,” while, “the likelihood of the 10-year running average Lee Ferry volume dropping below 82.5 MAF was found to be ~46%.”<sup>26</sup> We would like the important modeling and analysis done in the Colorado River Risk Study and all associated presentations to be included in the administrative record for the Project.<sup>27</sup>

The above mentioned statistics do not take into account likely future development of water rights in the Upper Basin. If the Upper Basin States increase depletions beyond what is currently developed, the risk of draining the reservoirs to drastically low levels is even greater. If we account for the proposed Lake Powell pipeline, Wyoming’s expansion of Fontenelle Reservoir, and Colorado’s Windy Gap Firming Project, Gross Reservoir enlargement, and Whitney Reservoir, there are potentially 350,000 acre-feet of additional diversions slated for development in the Upper Basin.<sup>28</sup> Most importantly, there are also just over 1 MAFY of undeveloped tribal water rights in the Upper Basin.<sup>29</sup>

In 2019, Anne Castle and John Fleck wrote a paper on the “Risk of Curtailment under the Colorado River Compact.” They sum up nicely the various legal scenarios facing Colorado River Basin water users and the work done by Hydros Consulting on a Risk Study commissioned by Western Colorado water users.

“The Risk Study indicates that an increase in demand in the Upper Basin of approximately 500,000 acre-feet or 11.5% roughly doubles the risk of Lake Powell declining below elevation 3,525 feet and the risk that the 10-year running average flow at Lee Ferry will drop below 82.5 MAF. That means that, with such an increase in demand, the risk of Lake Powell dropping below elevation 3,525 feet in the next 25 years would

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<sup>26</sup> Colorado River Risk Study: Phase III Update. June 20, 2019. Hydros Consulting Inc. Available at: <https://waterinfo.org/wp-content/uploads/2019/07/Risk-Study-Phase-III-for-the-4BRT-meeting-6.20.19.pdf>

<sup>27</sup> Colorado River Risk Study: Phase I Summary Report. Oct. 18, 2016, Updated Aug. 1, 2018. Hydros Consulting Inc. Available at: <https://waterinfo.org/wp-content/uploads/2018/10/West-Slope-BRT-Risk-Study-Phase-I-Report-FINAL-8-1-18.pdf>

Colorado River Risk Study: Phase II Task 1 Report. May 17, 2018, Updated Aug. 1, 2018. Hydros Consulting Inc. Available at: <https://waterinfo.org/wp-content/uploads/2018/10/West-Slope-BRT-Risk-Study-Phase-II-Task-1-Report-FINAL-8-1-18.pdf>

Colorado River Risk Study: Executive Summary. Aug. 1, 2018. Hydros Consulting Inc. Available at: <https://waterinfo.org/wp-content/uploads/2018/10/West-Slope-BRT-Risk-Study-Executive-Summary-Phases-I-and-II.pdf>

<sup>28</sup> Castle, Anne and Fleck, John. November 8, 2019. The Risk of Curtailment under the Colorado River Compact. p 32-33. Available at SSRN: <https://ssrn.com/abstract=3483654>

<sup>29</sup> Colorado River Basin Ten Tribes Partnership Tribal Water Study Report, December 2018, Ch. 5.11, available at <https://www.usbr.gov/lc/region/programs/crbstudy/tws/finalreport.html>.

be roughly 78% and the risk of the 10-year running average at Lee Ferry dropping below 82.5 MAF would be roughly 92%.”<sup>30,31</sup>

When the certainty of reduced future streamflows is coupled with proposed increases in Upper Basin diversions, we begin to see immense challenges ahead. There is a significant threat that Reclamation will not be able to deliver sufficient water to downstream users and to manage the Colorado River within the parameters of the “Law of the River” in the coming decades if large new water diversions are permitted in the Upper Basin. Since Reclamation is not in a position to adequately control the impacts of climate change on the basin, you must instead responsibly manage the distribution of water. The EIS must examine in full the potential long term and cumulative effects of allowing all proposed new developments in the Upper Basin at this time.

Specific recommendations for the scope of this EIS related to the evaluation of the cumulative effects of potential basin wide water depletion and water scarcity connected with the LPP Project:

- The EIS must analyze the possibility of a Compact Call with full buildout of proposed Upper Basin water projects and the effect this would have on the communities that will become dependent on the LPP Project, should it be approved. For example, it should analyze the effect on the repayment schedule for the construction of the Project if full water capacity is not available for the Lake Powell Pipeline (more detail in [Section 3.Q.](#)).
- The EIS must analyze the impact that a Compact Call would have on other communities and economies in the Upper Basin.
- Specific recommendations on EIS scope relating to reduced reservoir levels and impacts on water quality, power generation, and endangered species resulting from the Project’s cumulative water depletion impacts are found in detail in subsequent sections ([Section 3.O.](#) and [Section 3.P.](#)).

### **C. NEPA requires a programmatic EIS on the Upper Basin Drought Contingency Plan before this EIS can be completed.**

Colorado River management is in critical flux right now with rapidly changing hydrology. The 2007 Interim Guidelines adopted to prevent Lower Basin shortages have failed to keep Lake Mead and Lake Powell at safe levels during this 19-year drought. Last year, the Upper Basin States successfully negotiated a Drought Contingency Plan (DCP), part of which, the Drought Response Operations of Upper Basin Reservoirs, will significantly impact operations at Flaming

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<sup>30</sup> Castle, Anne and Fleck, John. November 8, 2019. The Risk of Curtailment under the Colorado River Compact. p 32. Available at SSRN: <https://ssrn.com/abstract=3483654>

<sup>31</sup> Colorado River Risk Study Meeting Packet. June 20, 2019. Hydros Consulting Inc. p 4. Accessed at <https://www.documentcloud.org/documents/6152613-20190620-4WSBRT-Meeting-Packet.html>

Gorge Dam, Aspinall Unit, and Navajo Dam.<sup>32</sup> Reclamation should include analysis of coordinated dam operations in the EIS modeling in order to determine whether there will be sufficient hydrology for releases from Flaming Gorge Dam to fulfill Utah's Ultimate Phase water rights and also be able to keep Lake Powell reservoir levels up.

Additionally, because the Upper Basin DCP will trigger major federal actions in regards to reservoir operations, a basin-wide Programmatic Environmental Impact Statement (PEIS) must be prepared that addresses the requirements and potential impacts of coordinated operations of the Aspinall Unit, the Navajo Dam, and Flaming Gorge Dam. It is essential that this basin-wide PEIS be incorporated in planning for releases from Flaming Gorge Dam because the operations of these dams will be tied together to ensure Compact obligations are met, including compliance with the Clean Water Act and the Endangered Species Act.<sup>33</sup>

Castle and Fleck, analyzing the Risk Study done by Hydros Consulting for Western Colorado water users and looking at DCP operations specifically and found that,

"[E]ven with all of the measures that are part of the Drought Contingency Planning process (Lower Basin DCP reductions, drought operations of Upper Basin reservoirs, demand management in the Upper Basin), a substantial risk, 25 to 35%, remains that Lake Powell will drop below elevation 3,490 feet by 2036. Reclamation's modeling confirms that even with the DCP, the risk of reaching critical levels in Lake Powell continues."<sup>34</sup>

Consequently, the EIS examining the LPP Project, as well as the Environmental Assessment (EA) for the Green River Block Water Rights Exchange, should be tabled as premature, since an accurate assessment of water availability at Flaming Gorge Reservoir, in full compliance with the National Environmental Policy Act, can only follow the development of coordinated dam operation guidelines under an Upper Basin DCP.

We specifically request that:

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<sup>32</sup> Agreement for Drought Response Operations at the Initial Units of the Colorado River Storage Project Act. 2019. Available at: <https://www.usbr.gov/dcp/docs/final/Attachment-A1-Drought-Response%20Operations-Agreement-Final.pdf>.

<sup>33</sup> Our request for a comprehensive PEIS for the Upper Basin DCP is supported by the federal district court of the District of Columbia, which confirmed, in its decision in *EDF v. Higginson*, that NEPA requires a comprehensive EIS to evaluate proposed federal projects within the entire Colorado River Basin: "All parties to this action agree that NEPA requires the Department of Interior to prepare environmental impact statements that evaluate the synergistic and cumulative effects of the proposed federal projects."

*Environmental Defense Fund (EDF) v Higginson*. June 21, 1978. (655 FR 2d, 1981). Accessed at: [www.riversimulator.org/Resources/Legal/GCD/1981EDFvHigginson655FR2d.pdf](http://www.riversimulator.org/Resources/Legal/GCD/1981EDFvHigginson655FR2d.pdf)

<sup>34</sup> Castle, Anne and Fleck, John. November 8, 2019. The Risk of Curtailment under the Colorado River Compact. p 30. Available at SSRN: <https://ssrn.com/abstract=3483654>.

- The Upper Basin DCP and the Lower Basin DCP be the subject of a basin-wide PEIS.
- The basin-wide PEIS include consultation with an independent science panel that is involved from the very beginning of the process and that the National Academy of Sciences review and approve the PEIS.
- All of these steps be taken before preparing the EIS for the LPP Project since a complete understanding of the DCP is needed to model likely future scenarios regarding Flaming Gorge Reservoir and Lake Powell.

**D. The re-consultation of Interim Guidelines must proceed before allowing new large depletions in the Upper Basin.**

The 2007 Interim Guidelines provided firm shortage curtailments in the Lower Basin up to 500,000 acre-feet per year to 2026, and a depletion schedule for the Upper Basin that increases by about 1 MAFY by 2060.<sup>35</sup> The agreements used no estimation of climate dependent yield for the natural supply of the Colorado River. Thus, the Interim Guidelines began without a concise water budget.

In their paper called “When will Lake Mead go dry?,” Professors Barnett and Pierce specifically point to this very problem.<sup>36</sup> Using a simplistic water budget approach, they accurately forecasted the reality that has lead to Drought Contingency Planning and will influence the renegotiation of the Interim Guidelines.

In the DCP, the possible shortage amounts imposed on the Lower Basin and Mexico have increased by 750,000 acre-feet.<sup>37</sup> The development of a future demand management program for the Upper Basin has been added to the unaltered depletion schedule and the yield of the Colorado River continues in a downward trend.

We agree with Barnett and Pierce: it is time to create, and work with, a firm supply schedule for the natural flow of the Colorado River Basin. This estimation should be based on models that take into account likely decreasing stream flows due to climate change to the year 2100. It is inappropriate to assume that this basin can successfully augment the water supply in the next 80-years (potentially up to the amount of 6.5 MAFY). The cost per acre-feet to balance the

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<sup>35</sup> Bureau of Reclamation. Nov. 2007. The FEIS on the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead. Accessed at <https://www.usbr.gov/lc/region/programs/strategies/FEIS/index.html>

<sup>36</sup> Barnett, T. and D. Pierce, (2008). When will Lake Mead go dry? Journal of Water Resources Research. Jan. 23, 2008. Available at <http://www.riversimulator.org/Resources/ClimateDocs/2008BarnettPierce.pdf>

<sup>37</sup> Brean, Henry. May 20, 2019. “Officials celebrate Colorado River drought deal at Hoover Dam.” Las Vegas Review-Journal. Accessed at: <https://www.reviewjournal.com/news/politics-and-government/officials-celebrate-colorado-river-drought-deal-at-hoover-dam-1668958/>



water budget in the 21st century would likely be 2 to 5 times greater (adjusted for inflation) than the total spent in the 20th century.

An agreement resulting from the re-consultation of the Interim Guidelines is necessary to safeguard critical habitat for endangered species and the water supply of nearly 40 million people. This negotiation process should be open to stakeholders across the basin, including the public. We request that the re-consultation of the Interim Guidelines allow for full and meaningful public participation. It is important that this agreement on Colorado River operations be completed before permitting the LPP Project and other large depletions in the Upper Basin. We need to understand where we stand with future water supply in order to weigh the cost/benefit ratio of investing billions in new water projects.

#### **E. The EIS must examine the over-allocation of Utah's Colorado River water rights as it relates to LPP Project water**

The State of Utah has vastly over-appropriated water rights to the Colorado River. Pursuant to the Colorado River Compact, associated "Law of the River," and the Hydrologic Determination done for the Upper Basin in 2007, Utah has 1,369,000 AFY of water available for use.<sup>38</sup> In 2009, the Utah Division of Water Resources claimed that Utah already depleted 1,007,500 AFY, with an additional 493,100 AFY in approved applications that are awaiting development, including the Lake Powell Pipeline with a 1967 priority date. As enumerated in the slides below, these major undeveloped water users include the Northern Ute Tribe (105,000 AFY), the Utah Navajo (81,500 AFY), the Green River Block for Uintah County (72,600 AFY), and the Lake Powell Pipeline (86,000 AFY), among others (the Green River Block and the Lake Powell Pipeline are grouped together as "Board of W R (et al.)."<sup>39</sup>

These new developments increase Utah's depletions to above the current maximum depletion levels allowed to Utah, and this is not even considering the likely cutbacks necessary to uphold Colorado Compact requirements with a changing climate. The uncertainties surrounding water rights in Utah make it difficult, if not impossible, to determine whether there is sufficient hydrology for releases from Flaming Gorge Dam to fulfill Utah's Lake Powell Pipeline Water Exchange Contract. Consequently, the EIS for the Lake Powell Pipeline should determine whether or not Utah has sufficient water rights to be the subject of an exchange, and that those rights are tied to actual wet water.

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<sup>38</sup> This number is already overly inflated because it does not take into account reduced stream flows due to climate change and the current Millennial Drought.

<sup>39</sup> Division of Water Resources. Upper Colorado River Basin, Current Policy and Issues Powerpoint Presentation. 2009. Slide 4 & 5. Accessed at [https://www.waterrights.utah.gov/meetinfo/m20090930/upper\\_colorado.ppt](https://www.waterrights.utah.gov/meetinfo/m20090930/upper_colorado.ppt)

Utah's Upper Colorado River Entitlement & Current Depletions		Potential Depletion Approved Applications (Undeveloped)	
		Applicant	Quantity (Ac Ft)
Utah's Apportionment (23%)	1,369,000 AF	San Juan County WCD	30,000
Current Depletion	1,007,500 AF	Central Utah WCD	29,500
Remaining Depletion	<b>361,500 AF</b>	Board of W R (et al)	158,000*
		Wayne County WCD	50,000*
		Kane County WCD	30,000
		Sanpete WCD	5,600
		Uintah County WCD	5,000
		Navajo Nation ?	80,000
		Ute Tribe ?	105,000
		<b>TOTAL</b>	<b>493,100</b>

The water rights for the Lake Powell Pipeline Block were all supposed to expire on Oct. 9th, 2009 if not put to beneficial use. The State of Utah allowed extensions beyond that time. Reclamation's Area Manager for the Provo Area Office, Bruce Barrett, lodged several protests to water rights from this block. In a protest letter to the Utah Division of Water Rights he states, "After the "Ultimate Phase" was deauthorized, Reclamation assigned this portion of the appropriation to the UBWR with the understanding that any portion of this water right not developed within 50-years of the original approval date (ending on October 6, 2009) would lapse."<sup>40</sup>

Because of the substantial over-allocation of both Utah's water rights, and the water rights of the Colorado River Basin as a whole, the junior status of the Lake Powell Pipeline water rights leaves the Project in danger of being impacted by future drought contingency measures and re-consultation of the 2007 Interim Guidelines, which will be finalized in December of 2025. More discussion follows, in [Section 3.Q](#), about the need to evaluate the costs associated with implementing a demand management program, partially because of LPP Project withdrawals, in the Upper Basin.

Also because of the over-appropriated nature of water rights in Utah, use of water for the Lake Powell Pipeline will put current water users in jeopardy of losing their more junior water rights with ongoing drought. The EIS should analyze and include the economic and cultural impact that a Compact Call or a curtailment would have on other water users in Utah's Colorado River Basin who have junior water rights to the Lake Powell Pipeline, but who have already become reliant on the water.

<sup>40</sup> Letter from Bureau of Reclamation to Utah Division of Water Rights. December 7, 2009. Accessed at: [https://www.waterrights.utah.gov/asp\\_apps/DOCDB/DocImageToPDF.asp?file=/docSys/v920/y920/y9200nr.tif](https://www.waterrights.utah.gov/asp_apps/DOCDB/DocImageToPDF.asp?file=/docSys/v920/y920/y9200nr.tif)

**F. EIS must scrutinize the “exchange” concept outlined in the Draft Contract for Exchange of Water for the Lake Powell Pipeline.**

The State of Utah is prepared to sign an Exchange Contract with Reclamation for the release of 86,249 AFY of water from Flaming Gorge to be withdrawn at Lake Powell.<sup>41</sup> The exchange contract has not been fully outlined and therefore it is difficult to review. In a draft contract from early in 2018, it states,

“On an annual basis, the direct flows that will be left in the river and used to meet ESA requirements will equal the [Flaming Gorge] project releases used for depletion by the State under the Assigned Water Right.”<sup>42</sup>

Nowhere does the exchange contract outline or describe the method of measuring and accounting the “direct flows” left in the river in order to equate those to the releases from Flaming Gorge Dam. We believe the project documents for the Lake Powell Pipeline need to include the details of this exchange. There would be costs associated with monitoring and accounting that also need to be included in the economic analysis.

We request that Reclamation and the UBWR provide more information on the mechanism of accounting for this water rights exchange. The EIS should require an in-depth look at tributary flows on the Green River in Utah to verify if such an exchange is even possible along side the settling of the Ute Water Compact and the Green River Block Exchange Contract of 72,641 AFY.<sup>43</sup> The EIS should incorporate detailed analysis of these tributary flows (Price, Duchesne, Yampa, Muddy, San Rafael, White, Duchesne, Price, San Rafael, Dirty Devil, and Escalante rivers) and how they and the ecosystems they support may be impacted by climate change and this appropriation in the coming years.

**G. Federal Water Rights claims of the Tribes should be settled and source water identified before water is developed for the Lake Powell Pipeline Project.**

Under the Winter’s Doctrine, the Northern Ute and Navajo Tribes have federal reserved water rights, dating back to the creation of the reservations, which have yet to be fully developed. The particular water rights assigned to the Ute Indian Unit of the Ultimate Phase were intended to go to the Northern Ute tribe. When that project never materialized, the Tribe settled with the federal government for the promise of future water rights. Thus far, a water contact has not been

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<sup>41</sup> Lake Powell Water Exchange Contract. Bureau of Reclamation webpage accessed at: <https://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=61018>

<sup>42</sup> Draft Contract for Exchange of Water - Lake Powell Pipeline. p. 5 Accessed at [https://www.usbr.gov/uc/provo/pdf/DRAFT\\_LPP\\_ExchangeContract\\_Oct2017.pdf](https://www.usbr.gov/uc/provo/pdf/DRAFT_LPP_ExchangeContract_Oct2017.pdf)

<sup>43</sup> The Green River Block exchange contract is similar to the Lake Powell Pipeline exchange contract in that it also relies on direct flows from tributaries to exchange for Flaming Gorge Project Water.

agreed upon and full water rights have not been assigned to the Ute tribe. The Navajo Tribe is also awaiting Congressional ratification of a water rights settlement that would let them utilize 81,500 acre-feet of water annually.

Because the State of Utah's approved water rights are over-allocated, as acknowledged by the Utah Division of Water Rights, the State must demonstrate where the water will come from to fulfill the Ute Water Compact before Reclamation finalizes the LPP Project water rights exchange with the State. The EIS must not only include consideration of these factors in its calculation of available water, but should also incorporate these anticipated new uses into modeling.

As has been discussed between Reclamation and the Ute Tribe, part of the water to fulfill the Ute Water Compact may come from the Green River and be stored in Flaming Gorge.<sup>44</sup> This type of settlement would require a contract with Reclamation for releases from Flaming Gorge Reservoir in order to protect fish flows and downstream uses. There is a limited amount of water available for contracts out of Flaming Gorge. In a 2007 letter to the Upper Colorado River Commission, Rick Gold of the Bureau of Reclamation outlined what Reclamation believes to be a safe allowable release from Flaming Gorge Reservoir of 165,000 AFY.<sup>45</sup> The combined total of both proposed contracts with the state of Utah, for the Green River Block and the Lake Powell Pipeline, is 158,000 AFY, which would leave only 7,000 AFY to potentially be made available to the Northern Ute Tribe. 165,000 AFY in possible releases from Flaming Gorge Reservoir is likely a high estimation given the shortfalls in climate modeling that Reclamation has been depending on.

As part of the Department of Interior, the Bureau of Reclamation has an obligation to tribes and native people that far outranks the LPP Project water right with a 1967 priority date. Secretarial Order 3335 states that,

“The trust responsibility consists of the highest moral obligations that the United States must meet to ensure the protection of tribal and individual Indian lands, assets, resources, and treaty and similarly recognized rights.”<sup>46</sup>

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<sup>44</sup> Ute Indian Tribe of the Uintah and Ouray Reservation. Nov. 2, 2018. Comments on United States Bureau of Reclamation's Green River Block Water Exchange Contract with the State of Utah and Draft Environmental Assessment. p. 3-4. Accessed at: <http://www.riversimulator.org/Resources/USBR/ExchangeContracts/UteIndianTribeCommentsUSBRgreenRiverBlockWaterExchangeContractDraftEA2018.pdf>

<sup>45</sup> Letter from Rick Gold, Bureau of Reclamation to Don Ostler, Upper Colorado River Commission (March 3, 2007). “Water Marketing from Flaming Gorge Reservoir.” Accessed at: <http://www.riversimulator.org/Resources/UCRC/UCRCflamingGorgeWaterAvailabilityReclamation2007.pdf>

<sup>46</sup> Secretarial order 3335. August 20, 2014. Reaffirmation of the Federal trust responsibility to federally recognized Indian tribes and individual Indian beneficiaries. Accessed at: <https://www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/Signed-SO-3335.pdf>

Consequently, Reclamation, the State of Utah, and the Uintah Ute Tribe need to complete and sign the Ute Water Compact and if necessary, settle an exchange contract for releases from Flaming Gorge Reservoir with the Northern Ute Tribe, which has pre-compact water rights and has been in negotiation with the State of Utah and Reclamation, *before* engaging with the State of Utah on a contract for releases from Flaming Gorge Reservoir for the LPP Project, which has significantly more junior water rights. In addition, the EIS should require an in-depth look at whether the LPP exchange contract is even possible along side the settling of the Ute Water Compact and the Green River Block Exchange Contract of 72,641 AFY.<sup>47</sup>

**H. Reclamation should address the legal uncertainty that surrounds the use of Colorado River Storage Project water in the Lower Basin of an Upper Division State.**

We recognize a legal controversy amongst Colorado River users and stakeholders that releases from Flaming Gorge Dam, in the Upper Basin Division, and conveyed by pipeline to Washington County, Utah, in the Lower Basin, may not be an appropriate use under the 1922 Compact. Reclamation's clarification on this matter is necessary.

**I. UBWR has not adequately proven the purpose and need for the Lake Powell Pipeline. EIS must fully examine alternative water supplies and conservation.**

The need for the Lake Powell Pipeline has long been contested. Water conservation and development of local water sources can likely fulfill the water needs of the growing Washington and Kane Counties through 2060, as examined by a citizen's alternative from Western Resource Advocates called, "The Local Waters Alternative to the Lake Powell Pipeline."<sup>48</sup> In order to account for conservation, the UBWR application simply examines the impact of eliminating all future outdoor water use, which is a highly unpopular and unconventional water conservation measure, rather than using a robust assortment of proven techniques used by similar desert municipalities to successfully decrease water demand.

Las Vegas, a nearby city with even warmer weather than Washington County, can serve as a good metric for what can be achieved through water conservation. Conservation efforts in the Las Vegas region have reduced the community's per capita water use by 46% between 2002 and 2018. In 2018, Southern Nevada residents used 113 gallons of water per capita per day.<sup>49</sup>

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<sup>47</sup> The Green River Block exchange contract is similar to the Lake Powell Pipeline exchange contract in that it also relies on direct flows from tributaries to exchange for Flaming Gorge Project Water.

<sup>48</sup> Nuding, Amelia. 2013. The Local Waters Alternative to the Lake Powell Pipeline. Western Resource Advocates. Available at <https://westernresourceadvocates.org/publications/the-local-waters-alternative/>

<sup>49</sup> Southern Nevada Water Authority. "Conservation facts and achievements." Accessed in Dec. 2019 at <https://www.snwa.com/importance-of-conservation/conservation-facts-and-achievements/index.html>

For comparison, Washington residents use 293 gallons of water per person per day, or 2.3 times the amount of water used in Las Vegas per person.<sup>50</sup>

Furthermore, calculations used by the applicant to predict future water demand scenarios have been examined by a state audit and found to be inaccurate. A High Country News article covering the issue states,

“On May 5 [2015], Utah’s Legislative Auditor General released a damning report revealing that the water agency’s forecasts are based on unreliable data and failed to adequately account for the possible contributions of conservation and irrigation water freed up as new homes consume farmland. “By excluding this added water supply,” the auditors write, “the projections accelerate the timeframes for developing costly, large-scale water projects.”<sup>51</sup>

In addition, the Kane County Water Conservancy District (KCWCD) has not officially agreed to take the water from the LPP Project. Originally, the LPP Project included 13,000 AFY for Iron County, but this county has since withdrawn its request for water because of high costs. We believe that the KCWCD might do the same after being presented with a true cost estimate and considering that they have very little need for Project water. In the 404 Clean Water Act permit application for the LPP Project, UBWR states, “There would be a projected water shortage of approximately 1,334 AFY in 2060 within the KCWCD service area under the No Action Alternative.”<sup>52</sup> This is telling because it mentions no water conservation measures, nor does it demonstrate a need for 4,000 AFY of water by Kane County. In fact, without any conservation measures taken, it appears that Kane County would only use one third of its full allocation under this application by 2060.

Reclamation should require that the applicant fully explore the impact that conservation, water pricing, and zoning measures could have on the need for the Lake Powell Pipeline. It should also fully explore the safe yield use of the Navajo Sandstone aquifer and other regional options as alternative sources of water in the region, after conservation. The applicant should be required to re-work the models used to predict future demand to fully incorporate a price driven, demand use scenario, as well as to accurately account for the conversion of irrigation waters to culinary use, as is done in the Local Waters Alternative. The burden is on the Applicant to show that there are no practicable alternatives.

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<sup>50</sup> USGS. “Water Use Data for Utah.” [https://waterdata.usgs.gov/ut/nwis/water\\_use/](https://waterdata.usgs.gov/ut/nwis/water_use/)

<sup>51</sup> Sarah Gilman. 2015, May 7. “Utah vastly overstating future water shortages.” High Country News. Accessed at <https://www.hcn.org/articles/utah-may-be-overstating-future-water-shortages>

<sup>52</sup> Insert to Application for Individual Permit Lake Powell Pipeline Coconino and Mohave Counties, Arizona Kane and Washington Counties, Utah Corps File No. SPK-2008-00354. P. 38 Accessed at [https://www.spk.usace.army.mil/Portals/12/documents/regulatory/public\\_notices/FY2019-pns/Exp-Jan-2019/200800354-PN-Encl1-AppNarrative.pdf?ver=2018-12-18-113214-243](https://www.spk.usace.army.mil/Portals/12/documents/regulatory/public_notices/FY2019-pns/Exp-Jan-2019/200800354-PN-Encl1-AppNarrative.pdf?ver=2018-12-18-113214-243)

**J. The EIS must address the impact of introducing chemically unique Colorado River water into the public utility lines in Washington County.**

In 1992, the municipal water utility in Tucson, AZ introduced Colorado River water into the drinking supply of nearly half of its customer base. Almost immediately customers began complaining that their water was dirty, foul smelling, containing rust, or had caused their pipes to leak.

“This new resource exposed Tucson’s extensive water system to water with characteristics very different from the groundwater the city had relied upon for decades. Among these differences were a level of total dissolved solids (TDS) of 650 mg/L, approximately twice that of the average local groundwater, and a more aggressive corrosivity potential, primarily related to a pH of about 7.6 in the treated CAP water compared to an average of 7.9 in groundwater. . . .In 1994, the Colorado River water supply was discontinued and the utility returned completely to using groundwater. By then, more than 14,000 complaints had been received and the utility ultimately had to pay more than \$2 million in damages to affected customers.”<sup>53</sup>

Residents of Tucson also passed an initiative blocking the delivery of Colorado River water because of its bad taste. Since then, the Tucson water utility has started injecting the Colorado River water into the ground to mix with naturally occurring aquifer water. It wasn’t until 2001 that they delivered a treated blend of Colorado River water and aquifer water to customers.<sup>54</sup>

As in Tucson, residents of Washington and Kane counties will likely reject the foul tasting Colorado River water given that they have better local alternative sources of water. The project budget does not outline the costs of treating or injecting Colorado River water or upgrading municipal plumbing systems to deal with the unique chemical nature of that water.

Chapter 10 of the Preliminary Licencing Proposal submitted by the UBWR to the Federal Energy Regulatory Commission (FERC) refers to a “a future conventional water treatment facility located near the mouth of Johnson Canyon” in Kane County without ever outlining the cost of this necessary component. The PLP makes no mention of the need for, or the cost of, a water treatment facility at the terminus of the pipeline in Washington County.<sup>55</sup> Omitting these two necessary features in the hydro system is a gross oversight in the project budget and plan and should be required to be included in the project description and budget in order to move forward with the Project.

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<sup>53</sup> Basefsky, Mitchell. Southwest Hydrology. March/April 2006. p. 24. Accessed at: [http://www.swhydro.arizona.edu/archive/V5\\_N2/feature4.pdf](http://www.swhydro.arizona.edu/archive/V5_N2/feature4.pdf)

<sup>54</sup> City of Tucson Water Plan 2000-2050. p. 2-8 Accessed at: <https://www.tucsonaz.gov/files/water/docs/waterplan.pdf>

<sup>55</sup> Utah Board of Water Resources. Preliminary Licensing Proposal, Revised Draft Socioeconomics/Water Resource Economics Study Report. 2015.

### **K. The EIS should examine the spread of invasive Quagga Mussels and the Impact on Fish and Wildlife**

In 2012, larvae, or veligers, of the invasive quagga mussel (*Dreissena rostriformis bugensis*) were found in Lake Powell. By 2013, adults had been detected, and by 2017 the lake shore, canyon walls, and the control gate of the Glen Canyon Dam were covered with layers of thousands and thousands of adults.<sup>56</sup> The adult mussels adhere to hard surfaces, causing physical blockages in fish screens, water intakes, pipes, tanks, and other drinking water infrastructure. By creating a buildup of sharp, smelly objects on docks and shorelines, the mussels also cause a significant decrease in the recreation experience.

Quagga mussels also have an impact on the environment, fish, and wildlife by altering the ecological food web and water quality.

“Infestation of source water bodies by dreissenid mussels can negatively affect water supply, water quality, and food web ecology within these systems. Heavy mussel infestations occasionally create conditions that promote blue-green algae blooms and negatively affect recreational fisheries and water treatment facilities that depend on these source waters.”<sup>57</sup>

We are very concerned that if the LPP Project is constructed, it will lead to quagga mussel infestation in Sand Hollow Reservoir. The National Park Service states, “It is crucial to keep the mussels from moving from Lake Powell to other lakes and rivers.”<sup>58</sup> The mussels could spread if any veligers survive transport through the pipeline. The applicant refers to chemical treatment stations as a way to mitigate this, but other entities trying to control mussel infestation in water treatment plants have had to use a multi-pronged effort including mechanical scrubbing and chemical treatments to keep water plants functional.<sup>59</sup> We do not believe the chemical treatment of veligers in the boosting stations will be enough to ensure that quagga mussel veligers do not ever enter Sand Hollow Reservoir and establish a colony.

In addition, the chemical treatment of mussels can put toxic byproducts into drinking water,

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<sup>56</sup> Hollenhorst, John. June 2, 2018. “Mussel Beach: Lake Powell has ‘trillions and trillions’ of these things.” Deseret News. Accessed at [www.deseretnews.com/article/900020372/mussel-beach-lake-powell-has-trillions-and-trillions-of-these-things.html](http://www.deseretnews.com/article/900020372/mussel-beach-lake-powell-has-trillions-and-trillions-of-these-things.html)

<sup>57</sup> Chakraborti et al. August 2016. Costs for controlling dreissenid mussels affecting drinking water infrastructure: Case studies. Journal- American Water Works Association <http://dx.doi.org/10.5942/jawwa.2016.108.0104>

<sup>58</sup> “Mussel Update.” Glen Canyon National Recreation Area Website. Accessed Jan 2019 at: [www.nps.gov/glca/learn/nature/mussel-update.htm](http://www.nps.gov/glca/learn/nature/mussel-update.htm)

<sup>59</sup> Chakraborti et al. August 2016. Costs for controlling dreissenid mussels affecting drinking water infrastructure: Case studies. Journal- American Water Works Association <http://dx.doi.org/10.5942/jawwa.2016.108.0104>



causing difficulties in water treatment plants. Continuous chemical treatment for invasive quagga mussel veligers could lead to violations of State Water Quality Standards.

“Various chemicals, in particular oxidizing chlorine-based chemicals, have been used to control dreissenid mussels in water infrastructure...[T]hey can adversely affect the water quality of receiving waters (Chakraborti et al. 2013). The formation of disinfection by-products (DBPs) is one of several drawbacks of using oxidizing chemicals such as chlorine. For example, an increase in total organic carbon (TOC) and harmful algal blooms (HABs) mediated by dreissenid mussel activity in source waters may exacerbate DBP levels in the treated water and increase potential complications in treatment processes to eliminate this toxicity. DBP formation depends on TOC levels, water temperature, chlorine, pH, bromide, and contact time. Increased TOC may require altering the water treatment processes in order to meet state and federal regulatory limits for finished water before distribution.”<sup>60</sup>

The applicant completely fails to address this important water quality issue in its application.

The additional cost of managing the invasive quagga mussels needs to be considered in the immediate and long term cost of operations for the LPP Project. In 2016, the Journal of American Water Works Association reported the following:

“Maintenance of mussels in drinking water infrastructure is not only cumbersome and poses water quality threats that are also expensive. The potential cost for upgrades to 13 hydropower facilities in the Colorado River Basin alone has been estimated to be \$23.6 million, with chemical costs estimated at another \$1.3 million per year.”<sup>61</sup>

The estimates mentioned above do not consider the cost of containment paid by the State of Utah or Department of Interior (DOI). In fiscal year 2017, the DOI spent \$8.6 million on quagga mussel containment nationwide. The DOI upped that request to \$11.8 million nationwide in fiscal year 2018.<sup>62</sup> At Lake Powell last year, federal agencies set up and staffed inspection checkpoints at docks, decontaminated boats, and led an aggressive public education campaign aimed at boaters. If quagga mussels infested Sand Hollow Reservoir, the state would have to implement a similar program for containing the threat and the cost of this would be significant.

The possible impacts that quagga mussel infestation could have on the environment that the EIS should examine include: alteration of the food web, promotion of blue-green algae blooms, changes in water quality, and negative effects on fisheries.

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<sup>60</sup> Ibid.

<sup>61</sup> Ibid.

<sup>62</sup> Department of the Interior Press Release. February 28, 2018. “Interior Releases Report on Fight Against Invasive Mussels.” Accessed at: <https://www.doi.gov/pressreleases/interior-releases-report-fight-against-invasive-mussels>

**L. The EIS should examine the environmental impacts on sensitive areas and cultural sites along the pipeline route.**

The Kanab Creek Area of Critical Environmental Concern is within the path of the preferred pipeline route. Living Rivers & Colorado Riverkeeper submitted timely comments on the proposal to amend the Bureau of Land Management's (BLM) Arizona Strip Resource Management Plan (RMP) as part of its evaluation of the proposed Lake Powell Pipeline route in the Kanab Creek Area of Critical Environmental Concern (ACEC) in 2018.<sup>63</sup> The Kanab Creek ACEC is important habitat for Southwestern Willow Flycatchers. The Kanab Creek ACEC was specifically designated "for the protection of endangered SW flycatcher habitat and riparian, scenic, and cultural resources," according to the Arizona Strip Field Office RMP.<sup>64</sup>

The applicant requested an amendment to the Kanab Creek ACEC Resource Management Plan in order to allow for the applicant's preferred pipeline alignment. The Final EIS for the Arizona Strip Field Office Resource Management Plan for the Bureau of Land Management (BLM) states "Designating the Kanab Creek ACEC and following strict management prescriptions associated with that designation would help maintain, possibly improve, water quality in the Kanab Creek area."<sup>65</sup> The EPA commended the BLM for the designation of the ACEC because of this.<sup>66</sup> Studies have shown that humpback chub and razorback sucker have been documented at the mouth of Kanab Creek in the Grand Canyon, which we too have observed and photographed on river patrols.<sup>67</sup> The EIS should look at the impacts that construction and disturbance upstream in the Kanab Creek ACEC riparian area might have on the sediment, water quality, and endangered species in lower Kanab Creek.

Reclamation must consult with the Kaibab Paiute Tribe because their aboriginal culture and heritage extends beyond the sovereign boundaries of their reservation. The UBWR has identified two possible pipeline routes. One route follows the highway corridor rather than going

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<sup>63</sup> Living Rivers. Comments on the proposal to amend the BLM's Arizona Strip Resource Management. Available at:

[www.riversimulator.org/Resources/BLM/AZstrip/ProposedArizonaStripResourceManagementPlanAmendment2018LivingRivers.pdf](http://www.riversimulator.org/Resources/BLM/AZstrip/ProposedArizonaStripResourceManagementPlanAmendment2018LivingRivers.pdf)

<sup>64</sup> BLM. 2008. Arizona Strip Field Office Resource Management Plan and Record of Decision. Signed January 29, 2008. p. 2-120. Accessed at

[https://eplanning.blm.gov/epl-front-office/projects/lup/95271/130322/158471/ApprovedPlan\\_Ch\\_2.pdf](https://eplanning.blm.gov/epl-front-office/projects/lup/95271/130322/158471/ApprovedPlan_Ch_2.pdf)

<sup>65</sup> BLM. 2007. Proposed Resource Management Plan and Final Environmental Impact Statement for the Arizona Strip Field Office, the Vermilion Cliffs National Monument, and the BLM Portion of Grand Canyon-Parashant National Monument, and a Proposed General Management Plan/Final EIS for the NPS Portion of the Grand Canyon-Parashant National Monument. p. 4-24. Accessed at

<https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage&currentPageId=142108>

<sup>66</sup> Letter from EPA to Arizona Field Office BLM. 2006, January 30. Accessed at

<https://archive.epa.gov/region9/nepa/web/pdf/arizona-strip-deis.pdf>

<sup>67</sup> Argonne National Laboratory. (2009). Annotated bibliography of the Humpback Chub (*Gila cypha*) with emphasis on the Grand Canyon population. Environmental Science Division. p. 41.

[https://www.researchgate.net/publication/255209974\\_Annotated\\_bibliography\\_for\\_the\\_humpback\\_chub\\_Gila\\_cypha\\_with\\_emphasis\\_on\\_the\\_Grand\\_Canyon\\_population](https://www.researchgate.net/publication/255209974_Annotated_bibliography_for_the_humpback_chub_Gila_cypha_with_emphasis_on_the_Grand_Canyon_population)

through pristine lands. Meaningful consultation with the Tribe is necessary in order to identify a route that would not impair sacred sites, burials and other cultural values.<sup>68</sup> The EIS must evaluate both pipeline alternatives in this NEPA process.

It should be noted that the applicant's preferred alternative, the South Alternative Alignment, is preferred because according to the applicant, it "avoids effects on the Kaibab-Paiute Indian Reservation."<sup>69</sup> This is concerning and perhaps alarming given that in the last round of comments to FERC, the Kaibab-Paiute Indian Tribe specifically requested that "the EIS must fully and objectively analyze and consider the existing highway alternative,"<sup>70</sup> which would cross the reservation alongside the existing highway. The Tribe's comments are extensive and detail many issues with the South Alternative Alignment, which crosses the BLM administered Kanab Creek Area of Critical Environmental Concern (ACEC). The No Action Alternative may be the only effective way to protect tribal cultural resources, and therefore should be fully analyzed.

#### **M. EIS must examine impacts to recreation along the pipeline route**

The route of the pipeline, along with transmission lines, pumping and hydroelectric stations would be located in a uniquely beautiful region of rural Utah. Many who visit this region are driving the highway to experience wonders of the natural world: Bryce Canyon National Park, Zion National Park, Canyonlands National Park, Grand Staircase-Escalante National Monument, and points between. Further industrialization of this scenic corridor will diminish the recreational value of the area and will thereby cause related economic harm.

#### **N. EIS must examine impacts to aesthetic values near Sand Hollow Reservoir**

Numerous residents of the neighborhoods near Sand Hollow Reservoir submitted written comments to FERC detailing complaints about the proposed overhead transmission lines routed through their neighborhoods. These comments cite major concern for changes in quality of life, obstruction of the natural view shed, and concern for diminishing property values because of this impact. It is unclear if these transmission lines are still a part of the proposed Project or not. If so, the EIS should examine these impacts thoroughly, including impacts on property values in the area.

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<sup>68</sup> Comments to FERC by the Kaibab Paiute Tribe, 2008.

<http://www.riversimulator.org/Resources/Pipelines/PaiuteCommentsLakePowellPipelineOpt.pdf>

<sup>69</sup> Insert to Application for Individual Permit Lake Powell Pipeline Coconino and Mohave Counties, Arizona Kane and Washington Counties, Utah Corps File No. SPK-2008-00354. P. 39. Accessed at [https://www.spk.usace.army.mil/Portals/12/documents/regulatory/public\\_notices/FY2019-pns/Exp-Jan-2019/200800354-PN-Encl1-AppNarrative.pdf?ver=2018-12-18-113214-243](https://www.spk.usace.army.mil/Portals/12/documents/regulatory/public_notices/FY2019-pns/Exp-Jan-2019/200800354-PN-Encl1-AppNarrative.pdf?ver=2018-12-18-113214-243)

<sup>70</sup> The Kaibab Band of Paiute Indians' Comments and Proposed Right-of-Way Conditions, Lake Powell Pipeline Project No. 12966. Accessed at <http://www.riversimulator.org/Resources/Pipelines/LLP2018/KiababBandPaiuteCommentsROWlpp.pdf>

**O. The EIS must address the impacts of the LPP Project on power generation at Glen Canyon Dam**

Diverting LPP Project water would lower the elevation and water availability at Flaming Gorge Dam. Flaming Gorge Dam is a central component in the Upper Basin DCP, and will be used to safeguard hydropower production by keeping Lake Powell at an operational level. More water being diverted before Glen Canyon Dam will not only increase basin-wide water scarcity, it will also impact water availability for hydropower production at Glen Canyon Dam. St. George fulfills its electric power and energy requirements through, in part, the purchase of federal power and energy generated by the Colorado River Storage Project (CRSP).<sup>71</sup>

The EIS must analyze the increased risk of Lake Powell levels falling below minimum power pool requirements due to the use of Project water and the effect that would have on regional power supply, as well as the economic and social impact that this will have in the region serviced by power from the Glen Canyon Dam.

**P. The EIS must address impacts of the LPP Project water withdrawal on downstream communities, river health, and endangered species.**

The Colorado River is already a strained ecosystem. This fact is demonstrated by the many threatened and endangered species found along its reach. These species include, Humpback Chub, Razorback Chub, Bonytail Chub, Colorado River Pikeminnow, Southwestern Willow Flycatcher, Yuma Clapper Rail, and the Western Yellow-billed Cuckoo. The impact on Colorado River flows downstream of the diversion for the LPP Project and the associated effects on endangered and threatened species should be examined fully by Reclamation in this EIS. Additionally, the EIS needs to analyze the impacts of decreased flows (due to the Project as well as the cumulative impacts of all proposed projects upstream, and climate change induced flow decline) on river and ecosystem health.

Salt and selenium levels have been trending upward since 2000 below Parker Dam in the Lower Basin.<sup>72</sup> Selenium levels increase in the heat of August, when agriculture diversions from the river are operating at peak demand. This month is a critical time-period to ensure good water quality for the nursery habitat that juvenile endangered fish must have to thrive.<sup>73</sup> Diversions in the Upper Basin are the foremost cause of increasing salinity in the Lower Basin and why the

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<sup>71</sup> City of St. George, Energy Services Department. June 2010. Integrated Resource Plan. Accessed at: <https://www.wapa.gov/EnergyServices/Documents/StGeorgeUtlRP2010.pdf>

<sup>72</sup> Colorado River Basin Salinity Control Forum. 2017 Review. Water Quality Standards for Salinity Colorado River Basin. Accessed at: <http://www.riversimulator.org/Resources/Salinity/ReviewSalinityControl2017.pdf>

<sup>73</sup> Herndon, Rudy. Oct. 31, 2013. "State turns attention to selenium levels in river." Times Independent. Accessed at: <http://www.livingrivers.org/pdfs/Press/StateTurnsAttentionToSeleniumLevelsInRiver.pdf>

Salinity Control Act was authorized in 1974.<sup>74</sup> The goal of Reclamation and the Salinity Control Forum is to remove 372,000 tons of salt from the Colorado River Basin by 2035.<sup>75</sup> The increased, cumulative diversions that would result from approval of the LPP Project would exacerbate salinity problems in the Lower Basin. The EIS should examine this issue fully as it relates to the cost of mitigation, the economic and health impacts on downstream municipal water users and irrigators, and the impact on special aquatic sites and endangered and threatened species.

The EIS should also examine the impacts of the mobilization of perched reservoir sediment that happens as reservoir levels diminish in Lake Powell and Flaming Gorge Reservoir. Reservoir sediment contains organic material which when mobilized, can deplete oxygen in the water column of the reservoir and negatively impact the critical habitat below the dams. The mobilized sediment can also liberate toxins and heavy metals into the water column and affect water quality for wildlife and human communities downstream.<sup>76</sup>

**Q. An accurate economic analysis of the Project from UBWR is required to move forward with the EIS.**

The Lake Powell Pipeline permitting process has thus far been a quagmire of incomplete design concepts, a poorly drafted water rights exchange, and perhaps most important for taxpayers in Utah, and an inaccurate economic analysis. The High Country News article titled “The Precarious Plan for the Lake Powell Pipeline” by Emma Penrod lays out a good description of the controversy surrounding the economics of paying for this project.<sup>77</sup> The root of this issue is that thus far, no sound budget has been presented to the public that outlines a complete estimate of project costs; nor has the true cost been analyzed in the Performance Audit of the Repayment Feasibility of the Lake Powell Pipeline released in 2019 by the Office of the Legislative Auditor General.<sup>78</sup> A true cost accounting and the associated economic model for repayment are both necessary for understanding the social justice implications of the Project as a whole because the residents of Washington and Kane County, as well as potentially taxpayers across Utah, including minority and low income populations, will be expected to foot the bill.

In the Performance Audit of the Repayment Feasibility of the Lake Powell Pipeline, using the presented incomplete cost estimate of \$1.43 billion dollars (2015 dollars), a number of scenarios

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<sup>74</sup> Salinity Control Act. Available at:

<http://www.onthecolorado.com/Resources/LawOfTheRiver/SalinityControl1974.pdf>

<sup>75</sup> Bureau of Reclamation. 2017. Quality of Water Colorado River Basin Progress Report No. 25.

Accessed at: <http://www.riversimulator.org/Resources/Salinity/ProgressReport25Reclamation2017.pdf>

<sup>76</sup> Pratson, Lincoln et al. November 2008. “Timing and patterns of basin infilling as documented in Lake Powell during a drought.” *Geology* 36(11). DOI: 10.1130/G24733A.1

<sup>77</sup> Penrod, Emma. Oct. 29 2018. “The Precarious Plan for the Lake Powell Pipeline.” High Country News. Accessed at <https://www.hcn.org/issues/50.18/water-the-precarious-plan-for-the-lake-powell-pipeline>

<sup>78</sup> Office of the Legislative Auditor General State of Utah. August 2019. Performance Audit of the Repayment Feasibility of the Lake Powell Pipeline. Accessed at [https://le.utah.gov/audit/19\\_05rpt.pdf](https://le.utah.gov/audit/19_05rpt.pdf)

are explored in which repayment is not feasible for the Lake Powell Pipeline. Different combinations of various factors including recession in the early years of the pipeline operation, high conservation, low growth, high inflation, and inclusion of capitalized payments make it difficult if not impossible for the Washington County Water Conservation District (WCWCD) to repay the cost of the LPP.<sup>79</sup>

A major oversight expressed in the audit is whether or not any bond interest repayment or capitalization of interest will be required by the State of Utah.

“It is unclear if including the state’s bond interest costs is required as part of the district’s repayment. Including the state’s bond interest costs could mean more than half a billion dollars more in repayments from the district to the state. . . . If interest is capitalized, depending on payment and capitalization schedules, the amount that would be repaid by the district could increase dramatically and negatively impact their ability to repay.”<sup>80</sup>

The State of Utah must first make clear the financial obligations of the WCWCD on loan repayments for the Project in order to fully understand the Project’s financial feasibility.

The economic estimate described in the permitting documents should also examine the hidden costs associated with dealing with water shortages in the Upper Basin if Washington County becomes reliant on Colorado River water. When shortages occur, Washington County will be in the same predicament as the Front Range of Colorado; they will seek agricultural water rights along the Colorado River to buy and convert to municipal water rights for the Project. Given the likelihood of future water shortages in the State of Utah, this hidden cost should be included in the economic models.

It is also likely that in the near future, a demand management scenario will be necessary to keep the Upper Basin in compliance with the Colorado River Compact if the UDWR develops the LPP Project. This program could have great costs associated with it. For example, we can look to the Metropolitan Water District of Southern California’s Palo Verde Land Management, Crop Rotation and Water Supply Program. In 2013 dollars, this program costs between \$4.7 million and \$19.1 million annually to deliver between 25,000 and 118,000 acre-feet of water. In addition to this annual per acre charge, there is roughly \$250,000 in annual administrative costs, as well as a \$73.5 million one-time sign up fee paid to participating farmers and a \$3.3 million

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<sup>79</sup> Office of the Legislative Auditor General State of Utah. Figure 2.1 Yearly Potential Excess Revenue for WCWCD to Pay for LPP and Other Water Projects. Accessed and explored at [https://public.tableau.com/profile/utah.legislative.auditor.general.s.office#!/vizhome/Audit2019-05Figure2\\_1/Figure2\\_1](https://public.tableau.com/profile/utah.legislative.auditor.general.s.office#!/vizhome/Audit2019-05Figure2_1/Figure2_1)

<sup>80</sup> Office of the Legislative Auditor General State of Utah. August 2019. Performance Audit of the Repayment Feasibility of the Lake Powell Pipeline. p. ii and p. 29. Accessed at [https://le.utah.gov/audit/19\\_05rpt.pdf](https://le.utah.gov/audit/19_05rpt.pdf).

environmental documentation and implementation cost.<sup>81</sup> The EIS needs to examine the LPP Project as it relates to increased need for a demand management program in the Upper Basin and the associated costs of such a program.

Colorado’s Southern Delivery System provides a good proxy for comparison to understand the potential economics of construction of the Lake Powell Pipeline. The first phase of the Southern Delivery System was completed by Colorado Springs Utilities in 2016. It consists of 62 miles of buried 66 inch pipe, 4 pump stations, and a 50 million gallons per day water treatment facility. The total cost for this project, including financing was \$1.45 billion. The project was heralded as an example of great fiscal responsibility that brought the project in under budget.<sup>82</sup> How then, can the Lake Powell Pipeline with its additional pump station, six inline hydroelectric stations, larger pipe, and more than twice the length, be expected to cost nearly the same amount?

	<b>Southern Delivery System</b>	<b>Lake Powell Pipeline</b>
<b>Date Completed</b>	April 2016**	
<b>Length</b>	62 miles**	140 miles <sup>††</sup>
<b>Pipe Diameter</b>	66 inch*	69 inch <sup>†</sup>
<b>Daily Delivery Capacity</b>	50 mgd*	66 mgd
<b>Yearly Delivery Capacity</b>	56,000 AFY	86,429 AFY <sup>†</sup>
<b>Pump Stations</b>	4*	5 <sup>†††</sup>
<b>Hydroelectric Facilities</b>	0	6 <sup>††</sup>
<b>Water Treatment Plant</b>	1 @ 50 mgd capacity*	0 included in plan <sup>†</sup> Likely 2 required
<b>Construction Costs</b>	\$825 million*	\$1.1-1.8 billion <sup>††</sup>
<b>Cash funded</b>	\$352 million*	-
<b>Debt funded</b>	\$473 million*	-
<b>Interest</b>	\$618 million over 30 years or more*	-
<b>Total Cost</b>	\$1.45 Billion*	\$1.1-1.8 billion <sup>††</sup>

<sup>81</sup> Palo Verde Fact Sheet 2013. Metropolitan Water District of Southern California. 2013. Accessed at [http://www.mwdh2o.com/MWD\\_PDF/NewsRoom/6.4.2\\_Water\\_Reliability\\_Palo\\_Verde.pdf](http://www.mwdh2o.com/MWD_PDF/NewsRoom/6.4.2_Water_Reliability_Palo_Verde.pdf)

<sup>82</sup> Water Finance and Management. August 12, 2016. “How Colorado Springs Funded its Landmark Southern Delivery System.” Accessed at <https://waterfm.com/colorado-springs-funding-sds/>

Above is a table comparing the two projects.<sup>83</sup> It should also be noted that the water intake apparatus at Lake Powell will be far more expensive and complicated than that at Pueblo Reservoir, and that a water treatment plant has not been presented as part of the LPP Project, though is likely.

As you can see, the given estimated total cost of the Lake Powell Pipeline is far below what it will likely cost in the real world. We roughly estimate an honest cost estimate for the Project to be between \$3-5 billion dollars. Before completing an EIS, Reclamation should require UBWR to develop a more accurate and complete project budget and submit it to the public for review.

An accurate budget and economic analysis required from the UBWR and examined in the EIS should include:

- Analysis of the effect on the repayment schedule for the construction of the Project if full water capacity is not available for the Lake Powell Pipeline, as with a Compact Call ([Section 3.B.](#))
- Cost of monitoring and accounting for “exchange water” ([Section 3.F.](#))
- Cost of water treatment facilities necessary to use the Colorado River for potable water in Washington and Kane County ([Section 3.J.](#))
- Cost of quagga mussel infestation/ mitigation ([Section 3.K.](#))
- Cost of additional water treatment required as a result of quagga mussel containment ([Section 3.K.](#))
- Impact to recreation and associated economic impacts along the route ([Section 3.M.](#))
- Impact to revenue generation at Glen Canyon Hydropower Project ([Section 3.O.](#))
- Cost of additional salinity control measures along the Colorado River ([Section 3.P.](#))
- Cost of dealing with decreasing water quality due to diminishing reservoir levels ([Section 3.P.](#))
- Cost of converting agricultural water rights in the Colorado River Basin of Utah to municipal water rights as water shortages take hold ([Section 3.Q.](#))
- Cost of implementing a successful demand management program in the State of Utah ([Section 3.Q.](#))
- Cost of bond financing and capitalized interest over time ([Section 3.Q.](#))

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<sup>83</sup> Sources for the graphic are:

\* Water Finance and Management. August 12, 2016. “How Colorado Springs Funded its Landmark Southern Delivery System.” Accessed at <https://waterfm.com/colorado-springs-funding-sds/>

\*\*Southern Delivery System (SDS) Water Project, Colorado. Water Technology Webpage. Accessed at <https://www.water-technology.net/projects/southern-delivery-system-water-project/>

†Utah Board of Water Resources. Preliminary Licensing Proposal. 2015.

††The Lake Powell Pipeline Website. Washington County Water Conservancy District. Accessed on Dec. 17, 2019 at [lpputah.org](http://lpputah.org).

††† Bureau of Reclamation. Lake Powell Pipeline Figure 3. Accessed on Dec. 17, 2019 at: [https://www.usbr.gov/uc/envdocs/eis/LakePowellPipeline/LPP\\_Both\\_Alignments.png](https://www.usbr.gov/uc/envdocs/eis/LakePowellPipeline/LPP_Both_Alignments.png)



Based on the economic impacts associated with the direct and indirect costs of the LPP Project detailed above, which the applicant has failed to fully and accurately disclose, we urge Reclamation to require a better accounting of costs be prepared and made public by the UBWR for the LPP Project so that its economic impacts can be fully evaluated in the EIS.

#### **IV. Conclusion**

Thank you for your close consideration of all the facts outlined above. We urge Reclamation to put completion of this EIS on hold until crucial agreements and other governmental actions are completed that will significantly clarify the amount of water available for the Lake Powell Pipeline and Green River Block Water Rights Exchange Contract. These critical agreements and actions include the Ute Water Compact, the agreements finalized by the re-consultation of Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead that will begin next year, and a Programmatic Environmental Impact Statement on the newly signed Drought Contingency Plan operations.

We request that Reclamation require the Utah Board of Water Resources and the State of Utah to provide necessary information on additional, currently unevaluated project costs, and on loan repayments, and to conduct and make available an accurate economic analysis prior to beginning to prepare the EIS. In addition, we require more information on the Exchange Contract between Reclamation and the State of Utah, which must outline an adequate system of accounting for the exchange of water from tributaries for Flaming Gorge water before we can fully understand the environmental and economic implications of such an exchange.

Finally, we urge Reclamation to fully consider all of the potential impacts of this extremely questionable project. In particular, it is imperative that modeling for the Project use the most up-to-date and relevant predictions of impacts from climate change on the hydrology of the Colorado River Basin and the allocation of water in the Upper Basin. We are in an incredibly important time. As a nation, we must begin to ground all of our infrastructure decisions on consideration of climate adaptation if we are to avoid catastrophic failure of that infrastructure. We hope that Reclamation will prepare an EIS that considers all the facts and the broad range of potentially significant impacts of this unnecessary and costly water project. We are confident that the preparation of a comprehensive EIS will make it clear that the selection of the No Action Alternative is required for the LPP Project.

Sincerely,

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