

Comments sent via email: lpp@usbr.gov

January 10, 2020

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

RE: Bureau of Reclamation [RR04963000, XXXR0680R1, RR.17549661.1000000] Notice of Intent to Prepare a Draft Environmental Impact Statement for the Lake Powell Pipeline project

Dear Mr. Baxter,

Please accept and fully consider these scoping comments from the Lake Powell Pipeline Coalition (Coalition) on the Draft Environmental Impact Statement (DEIS) for the Lake Powell Pipeline project (LPP). The Coalition appreciates the opportunity to comment on DEIS. The Coalition consists of: Conserve Southwest Utah, Glen Canyon Institute, Wild Arizona, Grand Canyon Chapter Sierra Club, Utah Chapter Sierra Club, The Wilderness Society, The Rewilding Institute, Grand Staircase Escalante Partners, Great Basin Water Network, Utah Rivers Council, Utah Audubon Council, Center for Biological Diversity and Living Rivers Colorado Riverkeeper. Some of the Coalition members have been studying and commenting on the LPP for over eleven years.

The Bureau of Reclamation (BOR) said they would use the Federal Regulatory Energy Commission's (FERC) studies for the DEIS and will update them with current information. Over the past ten years the Coalition has given very details comments outlining the flaws in the FERC's studies. BOR recommended we resubmit our comments for this new process. Therefore, we will submit our past comments on the project separately in Appendix A. The comments are also posted on FERC's website under [elibrary](#) Docket Number P- 12966. The elibrary web site is where all the FERC comments on the project are filed. Please include these comments into the scoping comment record. They include:

Conserve Southwest Utah (formerly Citizens for Dixie Future) *et al.*, Intervention elibrary no. 20080102-5057 (1-2-08) "Comments of the Lake Powell Pipeline Coalition on Scoping Document 1 and Pre-Application Document, and Additional Study Requests," eLibrary no. 20080707-5206 (Jul. 7, 2008); Citizens for Dixie's Future *et al.*, "Lake Powell Pipeline Coalition's Comments on Study Plans and Draft Study Reports," eLibrary no. 20110506-5125 (May 6, 2011); Citizens for Dixie's Future *et al.*, "Lake Powell Pipeline Coalition's Comments on Modified Draft Study Reports," eLibrary no. 20120323-5005 (Mar. 23, 2012); Lake Powell Pipeline Coalition's Comments PLP and revised draft study reports elibrary no. 20160229-5176 (February 29, 2016); Lake Powell Pipeline Coalition's NREA Comments elibrary no.20181120-5012 (November 20,2018)

Our comments are organized into nine sections.

In Section I: introduction including the interests and concerns of the Coalition members.

In Section II: alternatives to the proposed action that are less damaging to the environment.

In Section III: our concerns regarding the over-allocation of Colorado River.

In Section IV: our concerns with the pipeline's junior water rights status.

In Section V: Bureau of Reclamation's two service contracts to sell water from Flaming Gorge Reservoir to the State of Utah for the Ultimate Phase of Central Utah Project.

In Section VI: resources that will be affected by the project.

In Section VII: Bureau of Land Management's Arizona Strip Resource Management Plan Amendments.

In Section VIII: incomplete studies and other significant issues to be analyzed in the Draft Environmental Impact Statement DEIS.

In Section IX: our conclusions.

Contents

I.	Introduction.....	5
A.	Location.....	7
B.	Purpose and Need.....	7
II.	Alternatives.....	9
A.	Reducing Demand.....	9
B.	Increased yield from currently identified sources.....	11
C.	Appropriate accounting of yield from local sources.....	11
D.	Inclusion of water rights from private landowners that convert from agriculture to municipal and residential development.....	12
E.	Increased reuse and treatment of abundant brackish water.....	12
F.	Increased use of secondary water for yards and municipal irrigation by requiring secondary water lines to be installed to water outside landscaping.....	12
G.	Innovations in water management.....	12
H.	Water Use Pricing to signal conservation.....	12
I.	Better water conservation planning to lower demand.....	12
J.	Decoupling Future Demand for the Colorado River Water.....	15
III.	The Over Allocation of the Colorado River.....	15
A.	The Law of the River.....	15
B.	Upper Basin Colorado River allocation of 7.5 MAFY was lowered to 6 MAFY.....	19
C.	The Lower Basin Structural Deficit lowers the level of Powell and Mead.....	21
D.	Climate Change.....	22
E.	Cumulative Impacts to the Colorado River.....	27
IV.	LPP’s Junior Water Rights Status.....	29
A.	Senior Water Rights.....	29
B.	LPP water right is a paper water right that has no value, wet water vs paper water.....	30
C.	Junior priority of LPP’s water right.....	30
D.	The 1956 Colorado River Storage Project Act, the priority date of LPP water right....	33
E.	Why Isn’t There Any Water Left for the LPP?.....	35
F.	Utah’s Unsettled Federal Reserve Water Rights claims of the Indian Tribes.....	36

G.	Federal Reserved Water Rights.....	37
H.	The Navajo Utah Water Rights Settlement Act.	38
I.	The Northern Ute Tribe of the Uintah and Ouray Indian Reservation	38
J.	Depletions	38
K.	Utah’s Upper Basin Colorado River water rights are in disarray	39
L.	The Central Utah Project (CUP), and Ultimate Phase- junior status	42
M.	Ultimate Phase Water Right No. 41-3479 (LPP).....	43
N.	The Ultimate Phase/LPP water right No. 41-3479 should have lapsed 2009	44
O.	The Ultimate Phase water rights expire in 2020. What does that mean?.....	45
P.	Connected Federal Actions and Cumulative Actions	46
V.	The Lake Powell Pipeline Water Exchange Contract with BOR	47
A.	Flaming Gorge Water Right.....	47
B.	Green River Block Water Exchange Contract with BOR.....	52
VI.	The Effects to Natural Resources from the LPP	56
A.	Water Resources.....	56
B.	Water Quality	58
C.	Archeological Resources.....	60
D.	Vegetation Community Revegetation	60
E.	Noxious Weeds and Invasive Species.....	60
F.	Soils.....	61
G.	Geology	62
H.	Aesthetics and Noise	62
I.	Economic	62
J.	Recreation	65
K.	Value of Preserving Ecosystems	67
L.	Air Quality.....	67
M.	Energy Issues.....	67
N.	Energy Use	68
O.	Greenhouse Gas Emissions	69
P.	Operations Costs	69

VII.	The Arizona Strip Resource Management Plan Amendment, ACEC	69
A.	Relevance and Importance	71
B.	Wilderness Characteristics	71
C.	Cultural Values.....	71
D.	Wildlife Connectivity.....	72
VIII.	Incomplete Studies	78
IX.	Conclusion	80

I. Introduction

The Coalition is concerned that the LPP will further diminish an already over-allocated Colorado River, where existing deficits have not yet been addressed. It would increase the diversion from the Colorado River at a time when existing water supply diversions (as well

as ecological needs) already result in a functional deficit due to warming temperatures and shorter winters, leaving less snow melting at the river's source. We are concerned that the project would worsen water deficits for other beneficial uses of the Colorado River and Lake Powell, and it would otherwise cause significant, immitigable impacts on such uses.

It has been well-documented by the Bureau of Reclamation (BOR) that there is more water allocated in the Colorado River than the river produces annually, even without considering a warming climate. Yet, the BOR continues to over-allocate the river by selling water to Utah even though there isn't any physical water to sell. The releases from Lake Powell continue to exceed inflows. This over-allocation is draining the reservoirs faster than anyone predicted. The Colorado River has reached its limit, yet plans are underway to take more water for the LPP.

Many of the Coalition's members and supporters live near and recreate in areas across the Colorado River Plateau, the Great Basin, and the Green and Colorado Rivers that would be occupied or otherwise affected by the LPP if licensed. These areas are particularly valuable due to their character as undisturbed and uninhabited wildlands. They include Little Creek Mesa and the Little Creek Area of Critical Environmental Concern (ACEC), Kanab Creek ACEC, the Arizona Strip, the Cockscomb, and the Grand Staircase-Escalante National Monument (Monument). These areas provide unique opportunities for river running, fishing, hiking, camping, trail running, geocaching, mountain biking, appreciation of archaeological resources and natural quiet, journaling, birdwatching, ecosystem research, photography, and more. As stated in the Presidential Proclamation establishing the Grand Staircase Escalante National Monument, this is a "vast and austere landscape [that] embraces a spectacular array of scientific and historic resources... This unspoiled natural area remains a frontier, a quality that greatly enhances the Monument's value for scientific study."¹

The lead and cooperating agencies are obligated to consider the direct, indirect, and cumulative impacts of the industrialization of the pipeline's corridor to the land designated as the Grand Staircase Escalante National Monument in 1996. These lands are being litigated in the courts and may regain Monument status. We realize that there is an approved right-of-way for the pipeline along the highway. However, the pipeline's proposed infrastructure will affect the Monument's values by he proposed hydroelectric turbine and pumping stations with power lines connecting them to existing power grids, substations, lights, new access roads, regulating tanks and reservoirs, manholes, blow off valves, fencing, buried forebay tanks, buried surge tanks, (pig retrieval, used to clean the pipe) and surface overflow detention basins. The continued operation, maintenance, repair and excavation of the pipeline would significantly degrade the region's wildland pristine character. We are concerned about the damage to the land of building the pipeline, and all needed infrastructure cannot be rehabilitated or mitigated in this arid land. The pipeline will have an irreversible and irretrievable impact on these lands that we think are natural aspects of our National Heritage to be protected for future generations. See 42 U.S.C. 4331².

¹ Presidential Proclamation 6920 September 18, 1996, "Establishment of the Grand Staircase-Escalante National Monument," available at <http://www.ut.blm.gov/monument/planning-proclamation.php>.

² See at: <https://www.law.cornell.edu/uscode/text/42/4331>

The effects to be analyzed in the DEIS are the following.

A. Location

The current project description does not describe the complete project. Since one of the DEIS's proposed actions is, in part, to approve a BOR service contract for Utah to buy water for the LPP out of Flaming Gorge Reservoir; the project location is from Flaming Gorge Reservoir to St George, Utah. Currently the project is described only from Lake Powell. Therefore, the direct, the indirect and cumulative impacts on Colorado River Upper Basin's Green River natural resources are left out. UDWR claims the water for the LPP will come from Flaming Gorge Reservoir and travel 400 miles to Lake Powell and benefit the endangered Green River fishes. It also, does not include the impact of withdrawing water for development of the Green River Block BOR's service contract and its impact on Green River Endangered fishes (detailed below) that are included in the Upper Colorado River Basin Recovery Implementation Program. BOR and the cooperating agencies must recognize the critical fact that faulty data was used to make this assumption that instream flows will be available for the endangered fishes. We detail the faulty data used by the proponents below.

DRWR's claims that they will provide a certain amount of water for Green River endangered fishes, if they can have the same amount of water out of Flaming Gorge Reservoir (FGR) must be evaluated in DEIS. The Coalition is concerned that the Upper Colorado River Basin Recovery Implementation Program has not evaluated the withdrawal of water in the Green River Block water exchange contract.

B. Purpose and Need

The proponents have not provided a sufficient purpose and need for the imported water to service population growth in southwest Utah. The proponents claim in their purpose and need statement that:

UBWR proposes building the LPP in order to bring a second source of water to Washington and Kane Counties in Utah to meet future water demands, diversify the regional water supply portfolio, and enhance the water supply reliability.

However, most cities do not have the choice to diversify their water sources. Most cities use their water supplies much more efficiently than the proponents who are requesting more water.

Also, the real need for water has not been established by the proponents. This need should have been established before the environmental review of the proposed project proceeds. We understand that Utah's forecasted water demands are based on the Washington County Water Conservancy District's studies. However, based on our preliminary review, we are

concerned that this study is outdated³ and flawed and generally provides an insufficient basis to support the need for the proposed project. Indeed, conveying water without a proven need risks exacerbating the delicate situation among Colorado River Compact states.

We request that the lead and cooperating agencies independently investigate Utah's assumptions regarding the need to diversify by increasing water supply from the already over-allocated Colorado River. Based on our research and review of the studies, we believe that future water demand in the two counties can be satisfied with the expanded development of local water supplies, increased water conservation and improved efficiencies. We provide the data in the alternative section II below.

The DEIS should also should evaluate the project purpose in light of likely changes in the Colorado's hydrologic flow regime, long-term drought-related reductions in water availability, and the sharing of deficits among the seven Colorado River Basin states as defined in the *Interim Operation Guidelines* that will be in place only until 2026 and will be revisited then subject to the agreement of all Compact Basin states.

The Utah Division Water Resources' (UDWRe) real purpose is to draw its Ultimate Phase Central Utah Project (CUP) water right of 158,890 AFY from Flaming Gorge Reservoir using the proposed water use exchange service contracts with the BOR. For this reason, both service contracts should be considered in this DEIS. An accurate purpose and need statement is important to an accurate and adequate environmental document under NEPA. However, the CUP was designed more 60 years ago and was based on an assumption of a higher annual river flow in the Colorado River that has since been proved to be completely erroneous. We detail that error in our comments below.

The fundamental legal guidance on Purpose and Need Statements comes from the NEPA CEQ regulation.

Section 1502.13, which states that the Purpose and Need Statement:

“shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” Also from:

40 CFR 1500.1 Purpose (b) NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny

³ Further, when, in 2026, Reclamation revisits the *Colorado River Interim Guidelines for the Lower Shortages and Coordinated Operations for Lake Powell and Lake Mead* (2007) (*Interim Operations Guidelines*), available at <http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf>.

are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.

The importance of having enough water for the project's purpose was described in FERC study.

FERC's Study plan describes the nexus of water availability to the Project purpose as follows:

“[t]he availability of water for the pipeline would affect the ability of the Project to supply water to communities in Utah and to generate power. Therefore, the availability of water supply is directly related to the Project's purpose.”⁴

Therefore, an analysis in the DEIS of water availability for the LPP is critical to the proposed action. (purpose).

II. Alternatives

The Coalition proposes a water conservation alternative be analyzed as a reasonable alternative in the DEIS.

One of the Coalition's primary objections to this request for the Lake Pipeline Project is that UDWRe, after ten years of the study, has not seriously considered alternatives to LPP as a means of providing water for the growing populations in Washington and Kane counties. We contend that there are local sources of water and management options that prevent the need for an expensive and environmentally damaging 140-mile-long pipeline.

For whatever reason, the local Washington County Water Conservancy District (WCWCD) and the UDWRe have become fixated on the LPP as an essential part of the solution to a demand for water that seems far greater than the norm for other southwest communities, many of which are growing at similar rates. They never did their due diligence to reevaluate the sustainability of the LPP objectively, instead they have continued to spend millions on pursuing the project. The proponents have worked, often behind the scenes, to pressure elected officials to focus on the LPP, ignoring proposals for a suite of alternatives that other groups that we have articulated in the past, which would assure more than adequate water supplies at a cheaper cost that is sustainable for the same population projections. The lead and cooperating agencies must consider other practicable alternatives, reasonable alternatives that would be less environmentally damaging.

We describe critical components of alternatives be analyzed in DEIS below.

A. Reducing Demand

⁴ FERC Climate Change Study Plan #19, Section 19.5, p. 3-1. The Study Plan Water Availability

Utah already uses more water than conservation-minded communities in the Southwest, and Utah's conservation targets are arguably minimal. To its credit, UDWR_e responded to the need for more accurate reporting by revising its estimates of water demand in Utah communities.⁵ In 2015 Washington County's demand totaled 302 gallons per capita per day (gpcd). However, there is strong evidence that Utah has a propensity to underestimate its ability and its citizens' willingness to conserve water. In the early 2000s, Utah adopted a 25% state-wide conservation goal for 2025 based on usage in 2000, but by 2010 or so had already reached 18%. Rather than adopt an objective and independent conservation goal, UDWR_e blithely uses WCWCD's conservation target for 2060 based on a simple percentage reduction, another 15% from 2015, targeting 237 gpcd.⁶ Unfortunately, to increase the demand, WCWCD is only counting culinary grade water as a supply when many other water supplies need some minimal treatment. We are asking that the lead and cooperating agencies in their consideration of alternatives gather the facts from independent sources that are objective and unbiased.

Elsewhere, conservation-minded Southwest communities typically target 150 gpcd, and that number does not require extraordinary conservation. Indeed, Albuquerque has already reached this level. UDWR_e argues that water use in other communities cannot be compared with Utah values because of differences in measured amounts and assumptions. However, UDWR_e has made no effort to reconcile or normalize those estimates to see how Utah compares to other places.

In UDWR_e's projections of demand, there is double counting of safety buffers that are used to justify the LPP. Again, UDWR_e uses WCWCD values, but bases projected demand on the "high" projections of the service population (490,827) rather than baseline projections (458,960). This projection ignores the fact that birth rates are declining, and UDWR_e also includes a 15-Year Planning Reserve intended to protect against "unanticipated variations in supply and demand related to climatic conditions,"

This is an effort to justify the need for the LPP. Unfortunately, to increase the demand WCWCD is not counting many other water supplies that just need some type of minimal treatment. We are asking that the cooperating agencies in their consideration of alternatives gather the facts from independent sources and that they are objective and unbiased.

Elsewhere, conservation-minded Southwest communities typically target 150 gpcd, and that number does not require extraordinary conservation. Indeed, Albuquerque has already exceeded this level. UDWR_e argues that water use in other communities cannot be compared with Utah values because of differences in measured amounts and assumptions. However,

⁵ Utah Division of Water Resources (UDWR_e). 2018. 2015 Municipal and Industrial Water Use Data. June. see at: <https://water.utah.gov/2015WaterData.pdf>

⁶ UDWR_e, 2018. Lake Powell Pipeline 1 Demand/Supply Update FERC Project No. P-12966-004, November 16, 2018.

UDWRe has made no effort to reconcile or normalize those estimates to see how Utah compares to other places.

In UDWRe’s projections of demand, there is a double counting of safety buffers that are used to justify the LPP. Again, UDWRe uses WCWCD values, but bases projected demand on the “high” 2060 projections of the service population (490,827) rather than baseline projections (458,960). This projection ignores the fact that birth rates are declining,⁷ and UDWRe also includes a 15-Year Planning Reserve intended to protect against “unanticipated variations in supply and demand related to climatic conditions,” system infrastructure failure or catastrophic events,” “delays associated with complex permitting processes,” and “**unanticipated population growth**” (emphasis added). It doesn’t seem reasonable to count the uncertainty of population growth double. It also seems unreasonable for UDWRe to include a 15-Year Planning Reserve for water when the Sand Hollow Aquifer according to USGS has had about 127,000 acre-feet of water seep into the aquifer as of 2014; monthly recharge volumes ranged from 50 to almost 3,500 acre-feet from 2002 through 2014. It is hard to justify the WCWCD asking for a massive block of water from the river but not need it until much later. In the proponent’s previous studies on water demand they incorrectly assume this analysis is about water for a certain population however it isn’t. This DEIS process is about how to replace the 86,000 acre-feet of water only. We detail the way to get the same amount of water for future growth that does not damage the natural and human environment below.

B. Increased yield from currently identified sources

Conserve Southwest Utah (CSU) gave a presentation to the Governor’s Executive Task Force in September 2018. This presentation detailed other water supplies that are not being counted as supply by the UDWRe.⁸ The existing local water supplies outlined in the CSU’s presentation reveal in detail the various incorrect assumptions and assertions made to justify the need for LPP water. These include:

C. Appropriate accounting of yield from local sources.

Estimates of yield from existing local water supplies should be reviewed by an independent body to assure that they are not artificially limited or underestimated to justify the LPP. For example, WCWCD claims that Sand Hollow and Quail Lake Reservoirs and Sand Hollow aquifer, fed from the Virgin River, can only provide about 30,000 AFY as annual supply to 2060. Elsewhere, UDWRe projects 113,000 AFY Virgin River depletion to 2050—more than triple the claim of 30,000 AFY. This higher amount

⁷ See at: <https://www.ksl.com/article/46697266/utah-birth-rate-still-on-decline-even-as-economy-recovers>

⁸ CSU presentation on water supplies Sept 17, 2018 Finance Board see at: <http://conserveswu.org/wp-content/uploads/Finance-Board-2018-Sept-17-FINAL-pp.pdf>; and audio (start at 43:38 into the audio) see at: <https://www.utah.gov/pmn/files/429905.MP3>.

of water is not identified in future supplies. This higher amount of water is spring high water flows that can be stored in reservoirs.⁹

D. Inclusion of water rights from private landowners that convert from agriculture to municipal and residential development.

We do not advocate the development of agricultural land. Still, we do recognize that wherever agricultural land is converted to other uses, water could be converted to culinary or secondary use. More analysis is required to account for agricultural water, estimate its conversion rate, and determine its treatment costs.

E. Increased reuse and treatment of abundant brackish water.

There are several substantial sources of water considered to be too saline for M&I use. Given the current project cost of the LPP, it would seem wise to review these analyses.

F. Increased use of secondary water for yards and municipal irrigation by requiring secondary water lines to be installed to water outside landscaping.

Especially given the conversion of agricultural water, and particularly with the high rates of new development, it makes sense to require greater use of secondary water for landscape use. WCWCD claims it has no control over local ordinances, but it can and does have a great influence on local policies on water use. It makes sense to consider updating local landscape regulations to require secondary water lines be installed in new development. The wcwcd and state do not include sufficient agricultural conversions in their forecasts.

G. Innovations in water management.

Other alternatives, metering all water use, include undeveloped city water rights in future supply, rainwater capture, more careful analysis of increased yield and efficiencies from the Virgin River and local reservoirs, and underlying aquifers, used to seem inconsequential in terms of supply. However, these are significant water sources that are being ignored in UDWR's Water Needs Assessment for the LPP.

H. Water Use Pricing to signal conservation.

Water budget rates have been shown to reduce water use by 50%¹⁰ and pay for themselves over time.

I. Better water conservation planning to lower demand.

The state water management agencies should use industry-standard planning and management processes to develop plans that are executable and accountable in terms of objectives, tasks,

⁹ Utah Perspectives Colorado River, page 8, see at:

<https://water.utah.gov/InterstateStreams/PDF/TheColoradoRiverart.pdf>

¹⁰ Water Budgets see at: <https://conserveswu.org/programs/water-conservation/>

schedules, responsibilities and budget. Existing documents following current UDWR guidance do not contain these basic elements and therefore are neither executable nor accountable. They will not result in significant water conservation, but rather contain background information on infrastructure, current usage and measures that could be taken. Conservation goals should be tied to estimates of future water supplies and what has been achieved elsewhere. Methods to reduce usage should be studied and ranked, and then incrementally implemented in projects that are planned to move us toward the goal in measurable steps.

In addition, another alternative is Western Resource Advocate's *Local Waters Alternative*,¹¹ which offers a path forward that requires only moderate and incremental conservation efforts and assures adequate water for a healthy and growing population relying only on local sources and actions.

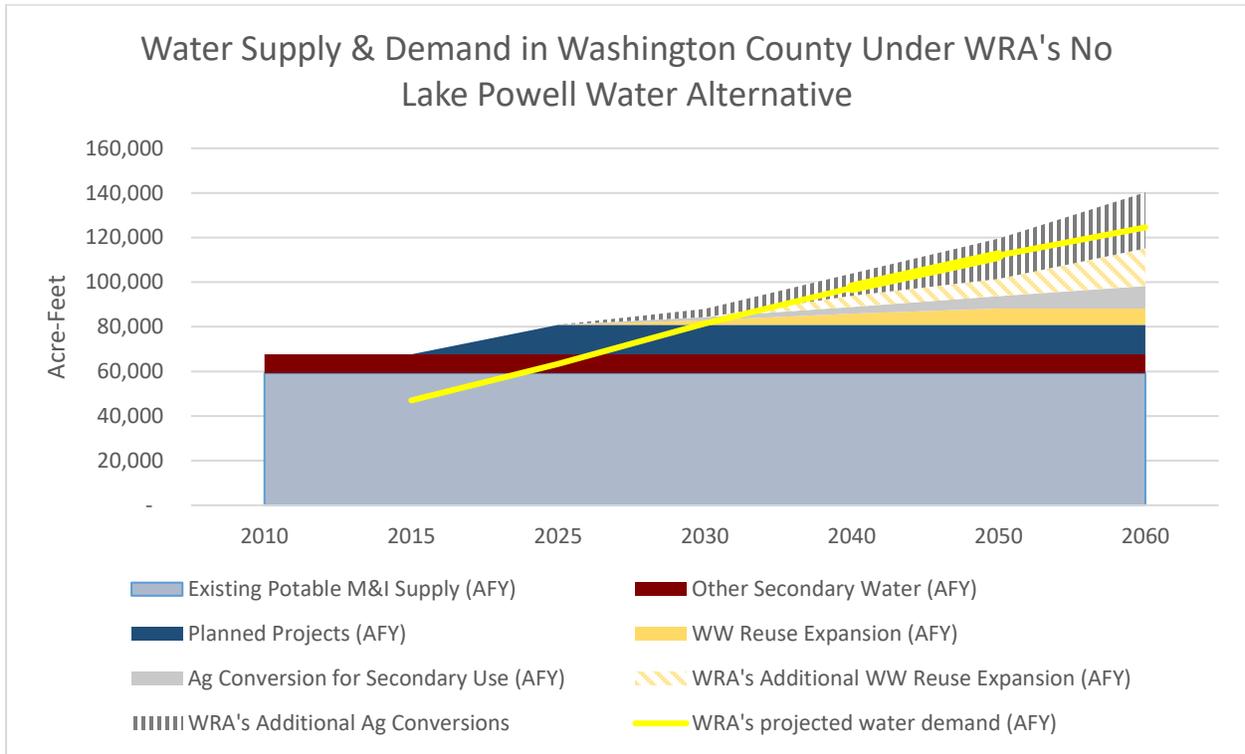
The *Local Waters Alternative* includes a list of actions, and would not cost \$2 billion. It would not lay waste to a 140-mile strip of the pristine natural landscape. In other words, it's a practical, reasonable alternative to the LPP, which would have a less adverse impact on people and the aquatic ecosystem, and it "does not have other significant adverse environmental consequences." Critically, "it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."

The following chart from the 2013 *Local Waters Alternative* illustrates the feasibility of this alternative. It shows that the demand (yellow line) fits easily within the supply. It is based on a demand of 176 gpcd for a population of 581,700 in 2060 and with a water supply of between 116,000 acre-feet a year (AFY) to 138,000 AFY. The *Local Waters Alternative* illustrates it could meet the demand by 2060, even without all the other local supplies we have pointed out in these comments. Moreover, current estimates of population growth dropped by 111,170 to 468,830 in 2019. Further, some cities

The *Local Waters Alternative* includes a list of actions, and would not cost \$2 billion. It would not lay waste to a 140-mile strip of the pristine natural landscape. In words, it's a practical, reasonable alternative to the LPP, which would have a less adverse impact on people and the aquatic ecosystem, and it "does not have other significant adverse environmental consequences." Critically, "it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." The following chart from the 2012 *Local Waters Alternative* illustrates the feasibility of this alternative. It shows that the demand (yellow line) fits easily within the supply. It is based on a demand of 193 gpcd for a population of 576,850 in and with a water supply of between 115,000 acre-feet a year (AFY) to 140,000 AFY. The *Local Waters Alternative* illustrates it could meet the projected demand by 2060, even without all the other local supplies we have pointed out in these comments. Moreover, current estimates of population growth dropped by 111,170 to

¹¹ See at: <https://conserveswu.org/wp-content/uploads/2011/11/WRA-Local-Waters-Alternative-LPP-fact-sheet.pdf>
<https://conserveswu.org/wp-content/uploads/LPP-Update-FINAL.pdf>

468,830 in 2060. Further, some cities are not tying water demand to population growth as they find they are still growing rapidly while using less water.



UDWRe claims that a water conservation alternative would cost \$1.5 billion without providing any factual basis for the claim. The cost of WRA’s *Local Waters Alternative* is estimated by WRA to be about \$410.3 million-plus infrastructure costs. The logic of building the LPP now, spending billions, and taking on substantial interest payments, does not make economic sense. With the *Local Waters Alternative*, you can pay for the cost as needed as the population grows. It will support, not undermine, long-term economic growth.

The DEIS must determine how the specific LPP costs will be paid back to the state that also includes the tax burden on residents. The Truth in Lending Act of 1968 is a United States federal law designed to promote the informed use of consumer credit, by requiring disclosures about its terms and cost to standardize how costs associated with borrowing are calculated and disclosed and should be considered in the disclosure to the public in this DEIS.¹²

Moreover, the proponent’s underestimate water supplies and water conservation and efficiencies that would lower the demand for water. While Southern Utah has some of the highest water use per capita in the west and has some of the cheapest water rates.

¹²See at: <https://www.debt.org/credit/your-consumer-rights/truth-lending-act/>

In the DEIS, the cooperating agencies should undertake a thorough evaluation of conservation alternatives independent of the proponents who are biased against conservation being a solution for the needed water supply. It would be less damaging to people and the environment.

J. Decoupling Future Demand for the Colorado River Water

The widespread presumption that population growth means growing water demand drives much of the politics of water planning in the Colorado River Basin. But it is wrong. Simply we are consistently using less water. In almost all municipal areas served with Colorado River water, water use is going down, not up, despite population growth. We have been getting it wrong for a century.”¹³

Rene Fleming, the water conservation official for the City St. George, said St George, Utah is using the same amount of water as it did in 2010. She said, in 2010 water use reported on the state’s annual report was about 27,000 acre-feet. In 2017 it was about 24,000 acre-feet and population grew from roughly over 70,000 to above 80,000 in the same time period. Vegetative cover has decreased by about 16%. She has a power point slide with an aerial view of a home in 1998 with a lot of grass and a similar sized lot and home in 2018 that is mostly xeriscaped. Therefore, the proponents current claim we are running water needs to be reevaluated in the DEIS.

III. The Over Allocation of the Colorado River

A. The Law of the River

“The Law of the River is the commonly used shorthand for the multiple laws, court decisions, and other documents governing Colorado River operations. The foundational document of the Law of the River is the Colorado River Compact of 1922. Pursuant to the compact, the basin states established a framework to apportion the water supplies between the Upper and Lower Basins of the Colorado River, with the dividing line between the two basins at Lee Ferry, AZ (near the Utah border).”¹⁴

It was decided that the annual flow of the river at Lee Ferry, Arizona 15 million acre-feet a year (MAFY) would be equally divided. With 7.5 MAFY for the Upper Basin States of Utah, Colorado, New Mexico and Wyoming and 7.5 MAFY for the Lower Basin states of Nevada, Arizona and California and water for Mexico. A few excerpts from the Compact:

i. In Article III (d) of the Compact requires: “The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of

¹³ Kuhn and Fleck, *Science be Dammed, How ignoring Inconvenient Science Drained the Colorado River*, p..215

¹⁴ Management of the Colorado River: Water Allocation, Drought, and the Federal Role, See at: <https://crsreports.congress.gov/product/pdf/R/R45546>

75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series ...”, [which means 7.5 MAF a year.]

ii. In a shortage Article III (c) of the Compact states that Upper Basin must provide half of deficiency of water for Mexico. [Utah is not planning for this in its remaining allocation.]

iii. ARTICLE III (c) (*water for Mexico*)

“If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).”

“Under the legally binding compact, the *Upper Basin states* are obligated to deliver 7.5 million acre feet of water downstream to the thirsty Lower Basin states. Unfortunately, this requirement was derived from faulty baseline data as the rainfall patterns that occurred in the years prior were abnormally high, and the flows were vastly overestimated. Now the legal right to use every drop is owned or claimed by someone and vastly exceeds its actual flow, making it dangerously over-appropriated and the most heavily litigated river in the country.”¹⁵

It is well documented there is more water allocated in the Colorado River than the river produces annually, even without considering a warming climate on diminishing water supplies. According to the BOR, water demand for Colorado River water has already outstripped supply since 2002 (see **Figure 1 below**). BOR indicated in a study the “apportioned water in accordance with the *Law of River* exceeds the approximate 100-year average “natural flow” of the river of 15 million acre-feet year (MAFY) at Lee Ferry and is 16.4 MAFY”¹⁶ (The “natural flow” is estimated in hydrological modeling as what the unregulated, un-diverted streamflow would have been absent human intervention.) “The Basin faces a wide range of plausible future long-term imbalances between supply and demand. This imbalance computed as a 10-year running average, ranges from no imbalance to 6 million acre feet (MAF) with a median of 3.2 MAF in 2060.”¹⁷

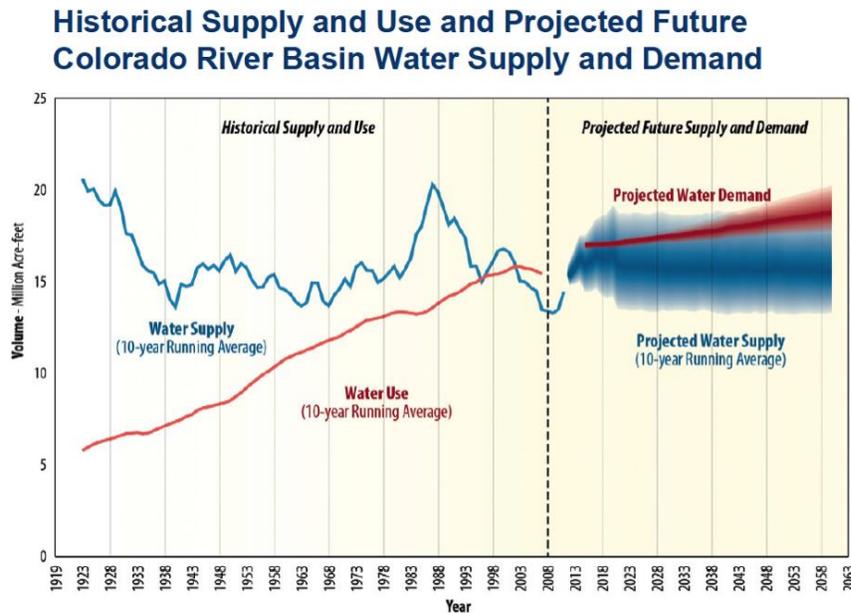
¹⁵ Penn State University, Water: Science and Society, Colorado River. See at : <https://www.e-education.psu.edu/earth111/node/720>

¹⁶ Colorado River Basin Stakeholders *Moving Forward* to address Challenges identified in the Colorado River Basin Water Supply and Demand Study, Phase 1 Report: Executive Summary, Bureau of Reclamation, May 2015. and https://www.usbr.gov/lc/region/programs/crbstudy/FactSheet_June2013.pdf

¹⁷ Ibid., page 3.

Compounding the problem is the fact river flows at Lee Ferry during last 15 years have only been 12.5 -13 MAFY. (See figure 2) Yet, state and federal decision makers are not using these diminishing flows in forecasting water availability for the LPP. Unfortunately, Reclamation is supporting more Colorado River diversions even if the water is not physically available- putting communities and taxpayers at risk.

Figure 1:



“In recent years, consumptive uses of Colorado River water have exceeded natural flows. This causes an imbalance in the basin’s available supplies and competing demands. A drought in the basin dating to 2000 has raised the prospect of water delivery curtailments and decreased hydropower production, among other things. In

the future, observers expect that increasing demand for supplies, coupled with the effects of climate change, will further increase the strain on the basin’s limited water supplies.”¹⁸ Bradley Udall and Jonathan Overpeck’s 2017 research article explains the risks of declining flows for the Upper Basin States in that the Upper Basin states are required by the compact to provide water to the Lower Basin states.

Some excerpts from their article:

“ 2000 and 2014 annual Colorado River flows averaged 19% below 1906-1999 average, the worst 15 year drought on record. One third or more of the decline was likely due to warming. The Upper Basin also has serious issues, one of which ripples into the Lower Basin. Under such low reservoir conditions, there is also a high likelihood that the Upper Basin states would have to curtail existing water deliveries to cities such as Denver,

¹⁸ Congressional Research Service, Management of the Colorado River: Water Allocation, Drought, and the Federal Role, May 17, 2019. See at: <https://crsreports.congress.gov/product/pdf/R/R45546>

Colorado Springs, Albuquerque and Salt Lake City in order to make required deliveries to Lake Mead. Heretofore, largely because of the structure of the Colorado River Compact, the Upper Basin and Lower Basin have been managed separately. With permanent flow declines of approximately 20%, however, the required deliveries to Lake Mead would become a hardship on the Upper Basin, as well as create Lower Basin delivery shortages [Reclamation, 2007; Barnett and Pierce, 2009; Rajagopalan et al., 2009]. The original compact, signed during one of the wettest periods in the last 450 years [Woodhouse et al., 2006], did not envision how large scale flow declines would be managed between the basins, and such declines could cause an allocation crisis between the Upper and Lower Basins [Adler, 2008].”¹⁹

Regrettably, there is not enough water in the Colorado River for all the states to develop their full share of the Colorado River. The water in the Colorado River has been over allocated since the river was divided up among the states in 1922. Since water supplies have already declined and are predicted to decline further in the future, seniority will be a crucial component in the competition for water. This means you don’t get your water until after everyone else who has senior rights to your gets their water. Utah allocated all its senior water rights to Utah’s surface water before 1958, the year of the LPP water right. The Central Utah Project has senior rights over the LPP. As water supplies continue to decline, the Wasatch Front will get the water, not the LPP. Therefore, the LPP has no seniority rights to the river, as explained in detail below.

1948 Upper Colorado Basin Compact, Utah’s Water Rights are only 23% of what remains after senior water rights are met

In 1948, the Upper Basin Compact was agreed to by the Upper Basin states of Utah, Colorado, Wyoming and New Mexico. The states realized a state’s water right couldn’t be a fixed amount like the Lower Basin. Consequently, each state divided the 7.5 MAFY Upper Basin share by a percentage depending on how much the state’s watershed contributed to the Colorado River.

This 7.5 MAF was divided, 51.75% to Colorado, 23% to Utah, 14% to Wyoming, and 11.25% to New Mexico. The percentage apportionment reflected uncertainty over how much would water remains after the Upper Basin had fulfilled its obligation of 7.5 MAF to the Lower Basin. In times of shortage/drought/aridification, the Upper Basin River Commission will decide the reductions. Utah’s 23% remaining share of the Colorado River is particularly vulnerable due to it being such a small percentage of the flow. There is an additional "upstream" aspect of the Law of the River that might affect the amount of water for the LPP, particularly in times of drought. These Upper_Basin rights are more uncertain and variable because they are allocated

¹⁹ *The Twenty-First Century Colorado River hot drought and implications for the future*. See at http://conserveswu.org/wp-content/uploads/Udall_et_al-2017-Water_Resources_Research.pdf, pages 2404, 2407

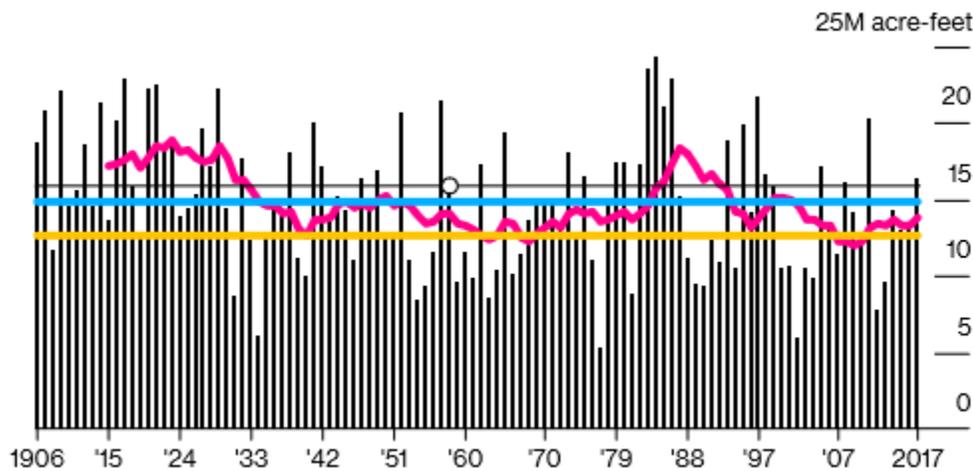
only as a percentage of what is left after obligations to the Lower Basin, and other senior water rights holders are met.

B. Upper Basin Colorado River allocation of 7.5 MAFY was lowered to 6 MAFY

In connection with Jicarilla Apache Nation’s water rights settlement, a 1988 hydrologic determination was completed for the Navajo Reservoir in a Bureau of Reclamation service contract. In this process, the Department of Interior determined the Upper Basin States share of 7.5 MAFY should be reduced to 6 MAFY. Based on BOR using its Colorado River Simulation Systems (CRSS) model for the period 1906-2000, they use natural runoff from Upper Basin averaged 15.3 MAF per year at Lees Ferry, AZ. This natural flow is calculated as if there were no diversions in the river system. This overestimates the annual flow that has been reduced to about 12.5 MAFY. (See Figure 2)

Chart (figure 2)

- Annual Flow Above Lees Ferry, black vertical bars
- 10-Year Moving Average, red line
- 1906-1999 Average, blue line
- 21st Century Average (as of 2017), yellow line



The State of Utah portion is 23% of 6 MAFY or 1.369 MAFY. Over time the 6 MAFY called safe yield will likely be lowered again because of predicted fewer storms, less snowpack feeding the river, or the Department of Interior adopting a lower annual flow for the river. But, if this yield is reduced, Utah’s remaining share of the river will also be reduced. Utah’s water right is not fixed and is a percentage of what is left after senior water rights holders are met. There is no guarantee what Utah’s allocation will be in the future. The Coalition assumes it will be less because other basin states water use is already being cut.

Utah's allocation is 23%. In 1922 the Upper Basin states were allocated 7.5 MAFY to divide. In a 1988 Hydrologic Determination, Upper Basin states could only divide 6 MAFY. Utah is using 23% of 6 million acre-feet a year for its share of Colorado River. But, a 2007 hydrologic determination stated the flow the Upper Basin states could reasonably plan for is now.

The State of Utah's portion is 23% of 6 MAFY or 1.369 MAFY. Over time the 6 MAFY called safe yield will likely be lowered again because of predicted fewer storms, less snowpack feeding the river, or the Department of Interior adopting a lower annual flow for the river. But, if this yield is reduced, Utah's remaining share of the river will also be reduced. Utah's water right is not fixed and is a percentage of what is left after senior water rights holders are met. There is no guarantee what Utah's allocation will be in the future. The Coalition assumes it will be less as other basin states' water use is already being cut.

Utah's allocation is 23%. In 1922 the Upper Basin states were allocated 7.5 MAFY to divide. In a 1988 Hydrologic Determination for the Navajo Reservoir, Upper Basin states could only divide 6 MAFY. Utah is using 23% of 6 million acre-feet a year for its share of Colorado River. But, a 2007 hydrologic determination stated the flow the Upper Basin states could reasonably plan for is now lower, between 5,550,000- 5,720,000 acre-feet a year (AFY).²⁰ Therefore, if you use 5,550,000 AFY times 23%, equals 1,276,500 MAFY, not 1,369,000 that Utah is using now. Due to Utah's water right being only 23% of what remains; their remaining water right will continue to decline and there wouldn't be enough water for the LPP.

The Upper Basin's annual water right is 6 MAFY and Utah's share of that is 1,369 MAFY that it has left to use. However, this calculation uses a much higher annual flow of the river of 15 MAFY. Now we have learned that the annual flow of the river is much lower and since Utah only gets a percentage of the flow it is a risk of being much lower.

For example:

6 million acre-feet minus- 50,000 ac ft for AZ equals 5,950,000 acre-feet.

23% of 5,950,000 acre-feet = 1,368,000 af; (Utah is now using this)

The 2007 hydrologic determination stated the flow the Upper Basin states could reasonably plan for is now lower, between 5,550,000- 5,720,000 acre-feet a year (AFY).²¹ Therefore,

²⁰ see at: <http://www.riversimulator.org/Resources/USBR/2007HydrologicDetermination.pdf>

²¹ see at: <http://www.riversimulator.org/Resources/USBR/2007HydrologicDetermination.pdf>

23% of 5,550,000 AFY = 1,276,500 (Means less water Utah can use) and no left for the pipeline.

Utah's Allocation using 6 MAFY

1.369 MAFY using 23% of 6 MAFY

1.008 MAFY used

361,000 acre-feet remaining in Utah's allocation using higher flows of 15 MAFY.

C. The Lower Basin Structural Deficit lowers the level of Powell and Mead

The DEIS should analyze another significant risk that there will not be enough water for LPP. It is the imbalance in Lake Mead between inflows and outflows known as the Lower Basin's *structural deficit*. "This means under normal water supply conditions, the rules created by the regions political leaders over the previous century had allocated more water on paper that the river could provide."²² Eric Millis, director DWRe gave a presentation at the Utah Water Users Workshop in March 2018 on the structural deficit in existing Compact agreements. The problem is there is more water going out of Lake Mead than the amount of water going into Lake Mead.

According to Mr. Millis given basic apportionments in the Lower Basin 7.5 MAFY, the allotment to Mexico 750,000 AF, with normal 8.23 MAFY release from Lake Powell, Lake Mead storage declines about 12 feet each year.

Here are excerpts from his power point presentation.²³

Water Budget at Lake Mead

- Inflow (release from Powell) = 9 MAF
- Outflow, AZ, CA, NV and Mexico = - 9.6 MAF
- Mead evaporation losses = -.06 MAF
- Balance = - 1.2 MAF (annual deficit)

Impacts of the Lower Basin Compact's Structural Deficit

- Results in a decline of 12+ feet in Lake Mead every year when releases from Powell are "normal" (8.23 MAF)
- Results in a decline of 4 feet in Lake Mead every year when releases from Powell are "balancing" (9.0 MAF)

²² Kuhn and Fleck, *Science be Dammed, How ignoring Inconvenient Science Drained the Colorado River*, p.9

²³ <http://conserveswu.org/wp-content/uploads/Eric-Millis-pp-2018.pdf> Utah Water Users Workshop, March 2018

Drives Lower Basin to take shortages that may bring Lake Powell down with it if more water is required to be released under the 2007 Guidelines.

D. Climate Change

As a cooperating agency, BLM must take a hard look at climate change on the direct, indirect, and cumulative impacts on humans and ecosystems from a changing climate on annual flows for the LPP in the DEIS.

The significant issues to be analyzed in DEIS include:

Impacts on the ecosystem from climate change include shrinking water resources, extreme flooding events; invasion of more combustible non-native plant species; soil erosion; loss of wildlife habitat, and larger, hotter temperatures. Many of these impacts have been cataloged in recent studies by federal agencies showing the effects of climate change, mainly in the United States, such as the National Climate Assessment.

Secretarial Order 3289 unequivocally mandates that all agencies within the Department of Interior "analyze potential climate change impacts when undertaking long-range planning exercises, setting priorities for scientific research and investigations, developing multi-year management plans, and making major decisions regarding potential use of resources under the Department's purview." SO 3289, incorporating SO 3226. This falls squarely under this guidance and BOR must assess impacts from the proposed actions that may directly, indirectly, or cumulatively result in exacerbating climate change within the DEIS.

Further, NEPA regulations require that NEPA documents address not only the direct effects of federal proposals, but also "reasonably foreseeable" indirect effects. These are defined as: indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." 40 C.F.R. § 1508.8(b) (emphasis added).

Therefore, BOR and Department of Interior cooperating agencies are required to take a hard look at direct, indirect, and cumulative impacts to and from climate change in the areas of this proposed DEIS.

UDWRe claims that they considered climate change when assessing water availability for the LPP. However, it is not clear how they did this because the hydrological models they used do not consider climate change. The Coalition questions UDWRe's exclusive use of BOR's CRSS, DNF model, and the Index Sequential Method (ISM), because these methods do not account for the impact of a warming climate, nor does the 2007 Interim Guidelines EIS. The models only use the 100-year average of 15 MAFY at Lee Ferry. The Colorado River Compact allocated 7.5 MAFY to the Upper Basin States and 7.5 MAFY to the Lower Basin States. As

mentioned above, stream flows have continued to decline due to increasing temperatures. The cooperating agencies could use BOR's available climate models that reflect declining future flows, such as the Downscaled GCM model results in the Colorado River Basin Study, which uses a mean annual flow of approximately 13.6 MAFY at Lees Ferry.²⁴ If 13.6 MAFY at Lees Ferry is used in modeling UDWR would not have remaining water rights to use for the LPP.

Some Colorado River scholars think going forward we should only plan on 13 MAF annually.²⁵

The major flaw in using these models is they only use a 100-year average of 15 MAFY at Lees Ferry, and they do not account for the fact that this flow has been reduced over the years.²⁶ Nor does 15 MAFY account for water for Mexico that is another 1.5 MAFY. Moreover, the snowpack, the main source of water for community water systems, is estimated to be reduced dramatically in the future by increasing temperatures. Dr. Robert Gillies from the Utah Climate Center found that the temperatures of all Utah's cities are going up. Utah has had 9% less snow since 1950 with fewer winter storms generally. Other studies predict that the Colorado River flows could be reduced by 10-30% over the next 50 years. For example, hydrological modeling using the impact of inflow reductions of 5% would be 14.28 AFY, a 10% reduction would be 13.53 AFY, and a 15% reduction would be 12.78 MAFY or less water at Lees Ferry. With these lower volumes of water, the adverse impact to aquatic resources could be severe. Lower flows also mean there would be less water to meet the 1922 Compact's allocations.

Furthermore, the current studies inappropriately exclude an analysis of climate change based on UDWR's unsupported assertion that climate change is not a concern. UDWR claims it will be able to draw water in dire conditions from Lake Powell, but there is no credible evidence on the record that supports this conclusion. UDWR did provide the various climate studies in the Federal Energy Regulatory Commission's (FERC) Study Report but fails to relate these studies to water availability for the project.²⁷ The statements of UDWR must be supported by reliable scientific evidence in the record, and this evidence has not been provided. Consequently, more accurate information from the updated climate models needs to be included in this DEIS. See.

²⁴ Technical Report B, Table B-3, page B-82. see at:

<https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html>

²⁵ Kuhn and Fleck, *Science be Dammed, How ignoring Inconvenient Science Drained the Colorado River*, p.212

²⁶ Mu, Xiao, Udall, Lettenmaier, On the causes of declining Colorado Stream Flows, the Colorado River is the primary surface water resource in the rapidly growing U.S. Southwest. Over the period 1916–2014, the Upper Colorado River Basin naturalized streamflow declined by 16.5%, despite the fact that annual precipitation in the UCRB over that period increased slightly (+1.4%). 2018 see at: see at:

<https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2018WR023153>.

²⁷ FERC Climate Change Study Plan #19, Section 19.5, p.3-1. The Study Plan Water Availability. The Study plan describes the nexus of water availability to the Project as follows:

“[t]he availability of water for the pipeline would affect the ability of the Project to supply water to communities in Utah and to generate power. Therefore, the availability of water supply is directly related to the Project's purpose.”

40 CFR 1500.1 (b) it states:

“(b) NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.”²⁸

Excerpts from the FERC’s Climate Change Studies. It outlines the position of the proponents on analyzing Climate Change on what they would not do and why they wouldn’t do it.

Chapter 5 Summary and Conclusions

“It is unknown at this time what impacts such management strategies might have on the State of Utah or the LPP Project. The LPP Project intake would be designed at an elevation which would be physically capable of receiving water in times of low storage. There are currently no plans to curtail Upper Basin State’s water use beyond what is required by the Colorado River Compact.”²⁹ [emphases added]

Study Report 18, Lake Powell Pipeline Hydrologic Modeling Analysis

“Though the potential impacts of climate change have been studied in the Colorado River Basin, the data needed to quantitatively evaluate these potential impacts with CRSS was not yet available at the time of study.”³⁰

Chapter 3, Literature Review, Introduction

“Under most drought scenarios, the most secure water rights are from reservoirs at the downstream end of river system.”³¹ [emphases added]

Section 19.5. The Study Plan Water Availability

The FERC Climate Change Study describes the nexus of water availability to the Project as follows:

²⁸ See at: <https://www.law.cornell.edu/cfr/text/40/1500.1>

²⁹ FERC Study Reports 19, p.3-1.

³⁰ FERC Study Report 18, Reclamation Colorado River Model Report, Appendix 2, p. 2.

*“[t]he availability of water for the pipeline would affect the ability of the Project to supply water to communities in Utah and to generate power. Therefore, the availability of water supply is directly related to the Project’s purpose.”*³² [emphasis added]

Moreover, state and federal studies, which have been cited thus far in support of the LPP, have not included study results that have already been undertaken on the variability of future declining river flows. The projected impacts of climate change on the declining snowpack and Colorado River flows are widely accepted within the scientific community, and they should be included directly in planning for future water supplies for the LPP in this DEIS.

Also, see the Colorado River Basin Water Supply and Demand Study, which states that the Basin faces a wide range of plausible future long-term imbalances between supply and demand.³³

Climate variability increases the risk of an already over-allocated Colorado River. Most importantly, climate scientists are warning this may not be a drought-which implies a return to normal precipitation in the future-but actually the start of a permanent aridification due to climate change.

In addition, The Colorado River Risk study by Colorado River District should be analyzed in the DEIS.³⁴

The DEIS should address the following primary impacts of climate change on the proposed LPP and water supplies:

1. Determine how much water from the Colorado River Basin System will be available to meet Utah's future water need for the Pipeline.
2. Hydrology – varies in time, location, and amount. Agreement on how to consider these factors in a water availability study will be essential to gain greater understanding and acceptance of the study concluded. The study for the DEIS should focus on issues in a period of known hydrology and a period extended from known hydrology.
3. Water Availability - will include both legal and physical supply considerations. Initially, legal availability will consider current demands.
4. Water Use – water use consideration (also referred to as demands) should include existing absolute water rights. Water use can be measured in terms of consumptive use, gross diversions, or total deliveries. Categories of water use include municipal (domestic and commercial), industrial, agricultural, water rights for instream environmental flows, and water rights for recreational in-channel diversions. The Study should examine: 1)

³² FERC Study Plan No.19, p. 219,

³³ see at:https://www.usbr.gov/lc/region/programs/crbstudy/FactSheet_June2013.pdf

³⁴ See at: <https://waterinfo.org/wp-content/uploads/2018/10/West-Slope-BRT-Risk-Study-Executive-Summary-Phases-I-and-II.pdf>

how non-consumptive uses within the priority system may affect Utah's ability to develop its consumptive use apportionment fully; and, 2) how much water would remain for non-consumptive uses if Utah fully developed its apportionment. At various locations within the state, initial water availability should be evaluated using the following formula: Water Availability = Physical Supply - Current Water Use (includes downstream demands).

5. The reliability of water supplies, given projected climate change scenarios. This reliability analysis should consider both hydrologic changes and the Bureau of Reclamation's guidelines for operation of Glen Canyon and Hoover Dams. In addition, the DEIS should address the impact of the proposed project, given projected climate change scenarios, on water-dependent habitat for endangered species in the Colorado River basin.

Proponent's LPP FACT SHEET

The Coalition has concerns about the assumptions made in the proponent's LPP FACT SHEET³⁵ that the impacts of the LPP have been addressed.

Coalition's comments on the FACT SHEET:

The Fact Sheet does not consider the recent studies that have been released. Even climate model projections in the recent past have proven to be overly conservative; that is, actual impacts have been greater than projected.

Comments on the FACT SHEET:

- From page 3, Looking to the Future: "*Modeling conducted by BOR in August 2018, taking into account future water uses in the upper basin including the LPP, indicates a near 0 percent chance of a declared 1922 Compact shortage for the upper basin through the year 2050 presuming hydrology remains similar to what the basin has experienced over the last 100 years*".
- Coalition Comment: This presumption is widely agreed to be invalid.
- From that same section: "*On the other hand, if the future hydrology of the basin is similar to the drier, hotter climate change predictions, and more closely resembles the last 30 years, including a period of historic drought, the probability of a declared 1922 Compact shortage rises to less than 13 percent through the year 2050*".
- Coalition Comment: However, it is widely agreed that basing projections in the past 30 years is invalid as climate models indicate continuing aridification. Even discounting that, a 13% chance of shortage is significant, especially if it is a permanent condition.

³⁵ <https://lpputah.org/wp-content/uploads/2019/02/LLPFactSheet-LPP-CO-River-021419.pdf>

- On page 3 LPP Fact sheet it states that the: *“Modeling conducted by BOR in August 2018, taking into account future water uses in the upper basin including the LPP, indicates a near 0 percent chance of a declared 1922 Compact shortage for the upper basin through the year 2050 presuming hydrology remains similar to what the basin has experienced over the last 100 years. On the other hand, if the future hydrology of the basin is similar to the drier, hotter climate change predictions, and more closely resembles the last 30 years, including a period of historic drought, the probability of a declared 1922 Compact shortage rises to less than 13 percent through the year 2050.”*
- Coalition Comment: The recent reports and actions and state’s water use being cut now invalidate the 0 percent chance of shortage in the proponent’s statement in their Fact Sheet.
- From page 4, What if Shortages Occur: *“Even if there were an interruption in LPP deliveries due to a Colorado River system shortage declaration, it would be temporary in nature...”*

Coalition Comment: There is no basis or evidence for a statement that it would necessarily be temporary.

There are many studies that project greater and permanent flow decreases (e.g., [Udall, Overpeck \(2017\)](#) indicating a 17% decrease by 2050 and up to 35% by 2100). We do not see a clear basis for the confidence reflected in the Fact Sheet. We would expect an extremely high supply probability (95+%) would be required before incurring the LPP’s expense and the risk to the state’s citizens and economy.

E. Cumulative Impacts to the Colorado River

In addition to a basin-wide assessment of shortage impacts on the river, the DEIS should carefully assess the effects of additional Colorado River development in Utah and other basin states.

As noted above, in the event of long-term reduced system storage, Upper Basin water users may be called upon to curtail water use in satisfaction of the Compact. The Upper Basin states do not yet have formal operating procedures to implement curtailment in the event of a Compact call. Still, the DEIS should develop a series of likely scenarios that project curtailment requirements in each of the states of the Upper Basin. Within Utah, the DEIS must further assess the impacts of the proposed project and curtailment requirements on other in-state Colorado River water users. Because the proposed pipeline is expected to supply municipal and industrial water uses, the DEIS must not only consider the probability of shortages to the pipeline’s water users but secondary impacts, such as how water supply agencies would replace the pipeline

supplies in the event of a shortage. Precedent for this approach is found in Reclamation’s *Final EIS for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, available at <http://www.usbr.gov/lc/region/programs/strategies/FEIS/index.html> (*Colorado Basin Shortage EIS*). See *id.*, §§ 4.14.2 and 4.14.3.1.

The DEIS should analyze the impact of the proposed project on river flows throughout the Colorado River basin, particularly in those reaches vulnerable to days of “zero flow” and those reaches for which environmental flows have been defined. Specifically, the DEIS should assess the impact of the proposed project on the magnitude and frequency of flows to the limitrophe reach of the Colorado River in Southern Arizona, the Colorado River in Mexico, and the delta region. In addition, the DEIS should assess the impact of the proposed project on instream flows (including mean flows) in the Upper Basin, where such flows have been legally established for the protection of natural and recreational resources. The analysis should also include all areas potentially impacted by shortage conditions in the Upper and Lower Colorado River basin. To the degree that the proposed project increases the probability of Lower Basin shortage conditions, impacts including economic losses and shortage water replacement (including economic costs such as employment, income, and tax revenue, as well as environmental impacts) should be assessed.

The DEIS should analyze all of the CRSP projects and other current and planned projects that will have a direct, an indirect or a cumulative effect on Colorado River water use in the region. The list is from Save the Colorado’s web page.³⁶

The water projects that should be included in the cumulative impacts in the DEIS include:

In Colorado:

- Moffat Collection System Project in Colorado (15,000 acre-feet — permitted, challenged in court)
- Windy Gap Firming Project in Colorado (30,000 acre-feet — permitted, challenged in court)
- Wolf Creek Reservoir on the White River in Colorado (? acre feet — hasn’t begun permitting yet)
- The San Juan Headwaters Project (? acre feet — local water district voters voted ‘no’ and sent the money back to the state)
- Irresponsible water use from the Animas-La Plata Project (? acre feet. New diversions will start soon — already built, but needs permits and MOUs for water use)
- Eagle River MOU (30,000 acre feet, not yet started permitting — story here and here).

³⁶ See at: <http://savethecolorado.org/campaigns/fighting-irresponsible-water-projects/>

- Six proposed new dams on the Fryingpan River in the Holy Cross Wilderness. (6,000 acre feet or more)
- A proposed new dam on the Crystal River

In New Mexico:

- Gila River Diversion in New Mexico (12,000 acre-feet — beginning permitting, Interior nixed some of the funding. future unknown)
- Navajo-Gallop Water Project (36,000 acre-feet — pipeline being constructed)

In Utah:

- Price River Dam in Utah (? acre feet — Corps halted BOR’s permitting process, for now)
- Green River Water Rights Exchange (up to 50,000 acre-feet. [In litigation.](#))
- [Flaming Gorge Pipeline](#) (55,000 acre-feet, water rights application filed which we “protested” in Utah State Water Court)
- Navajo Utah Water Settlement Act, 81,500 acre-feet. [Bill in Congress.](#)
- Green River Oil Shale (10,000 acre feet/year, [challenged in court](#))

In Wyoming:

- Fontenelle Dam expansion on the Green River in Wyoming (~125,000 acre-feet — Trump signed bill giving WY the water right. Project has not started permitting yet. Temporarily put “[on hold](#)“.)
- The [280-foot-high dam on the West Fork of Battle Creek in Carbon County](#), a tributary to the Yampa.
- Big Sandy Reservoir Enlargement on the Big Sandy River, a tributary to the Green River. (2,435 acre-feet — The “EA” is deficient
- In Arizona in the Lower Basin: The Little Colorado River pumped storage hydropower proposal would dam and flood two miles of the [Little Colorado River gorge](#). — see [press release here](#).

IV.LPP’s Junior Water Rights Status

A. Senior Water Rights

The doctrine of Prior Appropriation

“The use of water in many of the states in the western U.S. is governed by the doctrine of prior appropriation. The essence of the doctrine of prior appropriation is that, while no one may own the water in a stream, all persons, corporations, and municipalities have the right to use the water for beneficial purposes. The allocation of water rests upon the fundamental maxim "first in time, first in the right." The first person to use water (called a "senior appropriator") acquires the right (called a "priority") to its future use as against later users (called "junior appropriators").

“The use of water in many of the states in the western U.S. is governed by the doctrine of prior appropriation. The essence of the doctrine of prior appropriation is that, while no one may own the water in a stream, all persons, corporations, and municipalities have the right to use the water for beneficial purposes. The allocation of water rests upon the fundamental maxim "first in

time, first in right." The first person to use water (called a "senior appropriator") acquires the right (called a "priority") to its future use as against later users (called "junior appropriators")."³⁷

The priority date is the date the application for appropriation was filed with the state engineer. Priority distribution requires that a senior appropriator's water right be satisfied before a subsequent appropriator receives any water (Utah Code 73-3-21).

The Lower Basin's water rights are senior to Utah's Upper Basin water rights. This means when the water supply is low senior water rights holders get their water before junior water rights holders. Utah's rights are more uncertain and variable because they are not fixed but are allocated by using 23%, which is a percentage of what is left after obligations to the Lower Basin, water for Mexico, and other senior water rights are met. The Lower Basin has senior rights to water in Flaming Gorge and Lake Powell Reservoirs. This puts water for the LPP being taken out of Lake Powell in jeopardy. Utah is ignoring the risk.

The DEIS must include a chart of the significant water rights in the Colorado River's Upper and Lower Basins by priority date. The DEIS should analyze how the water for the LPP water right would be managed when the Upper Basin and Lower Basin states experience water shortages. The public and decision-makers need to be aware of risk of who will get shorted first after long periods of drought.

The priority date is the date the application for appropriation was filed with the state

B. LPP water right is a paper water right that has no value, wet water vs paper water

An important aspect of a water right due diligence investigation is determining whether the water is "wet." That is, even if the water right exists on paper, is there adequate water available in *priority* to satisfy the paper entitlement. Many water rights exist that have little or no value because of their legal and physical limitations. It appears that the LPP water right is one that is a "paper" water right because it doesn't have priority. The proponents have failed to do this due diligence while continuing to spend \$35 million of taxpayers funds to pursue the project.

There are two principal factors that can make a water right just a "paper" right. First, does the water right have a sufficient priority to allow it to divert water that may be physically available. Second, is water physically available when the water right is in priority. If the answer to either question is "no," then the water right may exist on paper, but have no real value or use.

C. Junior priority of LPP's water right

The priority date for Lake Powell Pipeline water right is 1958 when the Flaming Gorge Reservoir and Central Utah project was approved. This means that all water rights granted before 1958 have a higher priority than the Lake Powell Pipeline. Also, the Lake Powell Pipeline water right is junior to the Central Utah Project and junior to the Lower Basin States water rights

³⁷ <https://corporate.findlaw.com/business-operations/water-rights-law-prior-appropriation.html>

As flows diminish over time, Utah’s junior priority water right of 1956 for the Lake Powell Pipeline will be subordinated to senior water rights holders.

The LPP water right is junior to the following water right holders: ● Central Utah Project ● Lower Basin states ● Ute Indian Tribe ● Navajo and other tribal rights ● Other Federal Reserved water rights, not yet determined ● other water rights established before 1958.

Water rights having priority over the Lake Powell Pipeline water right include:

Water required for Mexico in the 1922 Compact, Article III (c):

*“If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System.....”*³⁸ [1] *Requires the Upper Basin to provide one-half the deficiency in the obligation to Mexico when it can’t be met through a surplus. The treaty obligation to Mexico is 1.5 MAF. Thus, in theory, if there are not surplus, the Upper Basin states would have to provide another 750,000 acre-feet. Utah does not consider Mexico’s water rights in their planning. The US and Mexico have a shortage agreement through 2026. And there is every expectation that it will be renewed at that time.*

Water required for the Lower Basin is 7.5 million acre-feet a year. The 1922 Compact Article III (d) states:

“The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series

The priority date for Lake Powell Pipeline water right is 1958 when the Flaming Gorge Reservoir and Central Utah project were approved. This means that all water rights granted prior to 1958 have a higher priority than the Lake Powell Pipeline. Also, the Lake Powell Pipeline water right is junior to the Central Utah Project and junior to the Lower Basin States water rights

As flows diminish over time Utah’s junior priority water right of 1956 for the Lake Powell Pipeline will be subordinated to senior water rights holders.

The LPP water right is junior to the following water right holders: ● Central Utah Project ● Lower Basin states ● Ute Indian Tribe ● Navajo and other tribal rights ● Other Federal Reserved water rights, not yet determined ● other water rights established before 1958.

³⁸ Upper Basin Compact 1948, See at: <https://www.usbr.gov/lc/region/pao/pdffiles/ucbsnact.pdf> (emphasis added)

Water rights having priority over the Lake Powell Pipeline water right include:

- Water required for Mexico in the 1922 Compact, Article III (c): “If, as a matter of international comity, the United States of America shall hereafter recognize in the United State of Mexico any right to the use of any waters of the Colorado River System.....”³⁹ Requires the Upper Basin to provide one-half the deficiency in the obligation to Mexico when it can’t be met through a surplus. The treaty obligation to Mexico is 1.5 MAF. Thus in theory, if there is not surplus the Upper Basin states would have to provide another 750,000 acre feet. Utah does not consider Mexico’s water rights in its planning. The US and Mexico have a shortage agreement through 2026. And there is every expectation that it will be renewed at that time.
- Water required for the Lower Basin is 7.5 million-acre feet a year. The 1922 Compact Article III (d) states: “The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series ...”⁴⁰
- The Upper Basin Compact of 1948 Article III. also includes lower basin requirement:⁴¹
 - Article IV – “In the event curtailment of use of water by the States of the Upper Division at any time shall become necessary in order that the flow at Lee Ferry shall not be depleted below that required by Article III of the Colorado River Compact, the extent of curtailment by each State of the consumptive use of water apportioned to it by Article III of this Compact shall be in such quantities and at such times as shall be determined by the Commission.....”
- Utah Indian Tribes and other Federal reservations such as National Parks, and National Forest Service lands
- Senior water rights holders having an earlier date of 1958.

The two modes of failure for the LPP: physical shortage (Lake Powell is too low) or legal shortage from senior water rights holders or a compact call. A compact call will also prolong a physical shortage, as water that might have been used to recover the reservoir will have to be bypassed to downstream users. The DEIS must analyze if the proponents have the senior water's rights for the proposed action.

Effects of the proposed LPP on the following should be addressed in the DEIS:

³⁹ The Colorado River Compact Article III (c); See at <https://www.usbr.gov/lc/region/pao/pdf/crcompact.pdf>

⁴⁰ Ibid. Article III (d)

⁴¹ Upper Basin Compact 1948, See at: <https://www.usbr.gov/lc/region/pao/pdf/ucbsnact.pdf> (emphasis added)

- 1944 Treaty with Mexico;
- The delivery of water to Lower Basin Colorado River Compact States
- Water quality impacts on Colorado River and Lake Powell;
- Effects on Native American water rights should be included in DEIS. In particular, the existing and anticipated future water rights agreements with Navajo, Northern Ute, and other tribes. Native American tribes are becoming increasingly successful in winning their claims to Colorado River water that pre-date the 1922 Compact. Experts estimate that tribes hold between 3 and 5 million acre-feet. As these claims are satisfied before, during, or after LPP construction, less water will be available for the proposed LPP.
- Lower flows on Habitat loss throughout the Colorado River basin.

D. The 1956 Colorado River Storage Project Act,⁴² the priority date of LPP water right

The priority of the water in the Colorado River Storage Project (CRSP) reservoirs is to provide water to the Lower Basin states to fulfill the compact commitment in article III of the 1922 Compact to deliver 7.5 MAFY to the Lower Basin states.

The 1922 Compact Article III (d) states: “The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series ...”

- In 1936, the Hoover dam was built, the second-largest reservoir in the United States.
- In 1956, The Colorado River Storage Project (CRSP) Act, passed that authorized construction of four initial units and the first 11 participating projects, to regulate the flow of the Colorado River.

“The 1956 Colorado River Storage Project Act has had a significant impact on the development and management of water in the Upper Colorado River Basin. The 1956 act authorized construction of the Colorado River Storage Project (CRSP) which allowed for comprehensive development of the water resources of the Upper Basin states (Colorado, New Mexico, Utah, and Wyoming) by providing for long-term regulatory storage of water for purposes including, regulating the Colorado River, storing water for beneficial use, allowing Upper Basin States to utilize their Colorado River Compact apportionments, providing for the reclamation of arid lands, control of floods and generation of hydroelectric power. The Colorado River Storage Project is one of the most complex and extensive river resource developments in the world.⁴³

There are four initial storage units built as part of the CRSP:

- [Wayne N. Aspinall Unit](#) in Colorado 1956, (Blue Mesa, Crystal, and Morrow Point Dams),

⁴² See at: <https://www.usbr.gov/lc/region/pao/pdffiles/crspuc.pdf>

⁴³ <https://www.usbr.gov/uc/rm/crsp/index.html>

Colorado River Storage Project Mainstem Units



- [Flaming Gorge Unit](#) in Utah, 1964
- [Navajo Unit](#) in New Mexico, 1958
- [Glen Canyon Unit](#) in Arizona; 1966

The priority date of the LPP water right is 1958 even though Flaming Gorge reservoir wasn't built until after 1964.

The priority date is the date the application for appropriation was filed with the state engineer. Priority distribution requires that a senior appropriator's water right be satisfied before a subsequent appropriator receives any water (Utah Code 73-3-21).

In 1964, Flaming Gorge reservoir was built as part of the Bureau of Reclamation's Colorado River Storage Project. Dams on the Colorado and its tributaries today provide water and hydropower to southwestern states.

“Glen Canyon Dam built by the U.S. Bureau of Reclamation (USBR) from 1956 to 1966 and forms Lake Powell, one of the largest man-made reservoirs in the U.S. A dam in Glen

Canyon was studied as early as 1924, but these plans were initially dropped in favor of the Hoover Dam (completed in 1936) which was located in the Black Canyon. By the 1950s, due to rapid population growth in the seven U.S. and two Mexican states comprising the Colorado River Basin, the Bureau of Reclamation deemed the construction of additional reservoirs necessary.^[7] However, the USBR faced opposition when it proposed the Echo Park Dam in Utah's Dinosaur National Monument, which the nascent environmental movement saw as a legal threat to the status of protected lands.^[8] After a long fight, the USBR agreed not to build the dam in Dinosaur National Monument, but only if the environmentalists did not oppose the proposed dam in Glen Canyon.”^[9]

Since first filling to capacity in 1980, Lake Powell water levels have fluctuated greatly depending on water demand and annual runoff.⁴⁴

⁴⁴ https://en.wikipedia.org/wiki/Glen_Canyon_Dam

The DEIS must reveal who has priority rights to the water in Flaming Gorge and Lake Powell Reservoirs as water continues to decline. Also disclose what priority does that put LPP water right in.

E. Why Isn't There Any Water Left for the LPP?

Utah has over-allocated the Green River Tributaries and is using all the water available.

The Bureau of Reclamation and the State of Utah are giving Utah the remaining river water in the Flaming Gorge Reservoir even though the Northern Ute's have the senior water rights in the Green River. The U.S. government promised to the tribe that they would get their water. Unfortunately, Utah will get the water, not the tribe.

This history explains why there wouldn't be another 150,000 AFY of surplus water in the Green river tributaries that Utah could exchange with Reclamation for water for the LPP. It explains in part why the Green River tributaries are so over-allocated:

“President Abraham Lincoln issued an executive order on October 3, 1861, establishing an Indian reservation in the Uinta Basin covering the drainage of the Duchesne River and its tributaries. Subsequent to the establishment of the reservation many acts and executive orders were made that affected the original reservation. The Indians had undisturbed possession of the reservation for some 40 years until the act of 1902 provided for the allotment of arable reservation lands to the public domain. In 1905 the United States Government opened the reservation to non-Indian land filings of 160 acres each, and as a result of this action Indian and non-Indian lands everywhere interspersed. Some of the Indian lands also were later acquired by non-Indians. The original Indian lands, however, retained the original priority of their water rights regardless of present ownership. The priority dates back to October 3, 1861, the date the reservation was established.

*The non- Indian settlers acquired secondary later rights under Utah State law by application to the State Engineer. The filing of water right applications began immediately after the opening of the reservation in 1905 and has continued to the present time. As a result, the rivers have been **very greatly over appropriated**, (emphases added) and the applications with late priority provide little or no water later after the high runoff except in the cases where reservoirs have been constructed under their junior rights. The Indian diversions, in general, are located in the lower reaches of the rivers and the diversions of water by junior rights upstream soon left the Indian canals without sufficient water. As early as 1913 government officials realized a water adjudication was*

necessary on the Lake Fork, Whiterocks, and Uinta Rivers if sufficient water for the Indian land would be available for the lower diversions.”⁴⁵

With less water to divide tribal rights have priority over the LPP unless Utah gets the tribes to agree in contracts to take second position as they have tried to do in previous contract settlement talks.

F. [Utah’s Unsettled Federal Reserve Water Rights claims of the Indian Tribes](#)

The Coalition was encouraged that the tribes would be more involved with this DEIS. They hold the most senior water rights in the Colorado River’s Upper Basin.

“Reclamation is also reinitiating government to government consultation with Indian tribes under section 106 of the National Historic Preservation Act and in accordance with Executive Order 13175.”(NOI) Also 40 CFR 1502.16 (c) requires consultation with the tribes.

In 2014, Dan Cordalis, a tribal water rights expert with the nonprofit environmental law firm Earthjustice in Denver, wrote about all the senior water rights that the tribes hold that are still undeveloped and could disrupt others who think they can use their water:

“In addition to the existing over-allocation of the river, another “new,” major demand is likely to come from Indian tribes, some of which have established the right to divert significant quantities of water but have not yet developed the infrastructure to do so, and others whose water rights are promised but have yet to be formally quantified. The latter is the case for 12 of the 28 tribes that reside in the Colorado River Basin.”

“What we do know is that the 16 tribes in the basin that have quantified their rights have established the right to divert nearly 2.9 million acre-feet of water annually from the Colorado River system, but only half of that water is currently being used. It appears, therefore, the remaining tribal claims leave a significant ‘cloud’ over the certainty of existing non-Indian water rights and uses.” It is important to note that these reserved water rights don’t require that the tribes had an actual need at the time of the reservation’s establishment, but are instead based upon future uses of the reserved water. A U.S. Bureau of Reclamation study now underway in cooperation with the Ten Tribes Partnership, a coalition of tribes with Colorado River water rights, is working to

⁴⁵ USU, 1965 Central Utah Project Inventory. pages 40,41
<http://www.riversimulator.org/Resources/Pipelines/UltimatePhase/CentralUtahProjectUltimatePhaseInventoryAvailableData1965.pdf>

*determine how much water may be associated with those rights.”*⁴⁶ The Ten Tribes Partnership Report has been completed.⁴⁷

The Indian Tribes were not at the table in the 1922 Colorado River Compact, nor in any later compacts and the compacts didn't change or reduce any of their rights. The states have to settle water rights claims with the tribes that have reservations in Utah because Indian rights have to come out of the Utah's remaining 361,000 acre-feet Colorado River water right. As river flows decline this could become problematic for the LPP water right because tribal rights have priority over the junior water right of 1958 LPP.

Resolving Indian water rights and the other Federal Reserved Water Rights before granting the Ultimate Phase CUP water right would remove significant uncertainty to what Utah's remaining share of Colorado River water should be used for.

G. Federal Reserved Water Rights

When the United States reserved public land for uses such as Indian reservations, military reservations, National Parks, National Forest lands, or Monuments and other public land reservations, it also implicitly reserved sufficient water to satisfy the primary purposes for which the reservation was created. Reservations made by presidential executive order or those made by an act of Congress have implied Federal Reserved Water Rights. The date of priority of a Federal Reserved Water Right is the date the reservation was established. The United States Supreme Court has determined that the measure of a Federal Reserved Water Right is not dependent on beneficial uses to which the water has been historically applied, but should be quantified based on the water needed to accomplish the primary purpose for which the reservation was established.

While some Federal Reserved Water Rights in Utah have been settled many have not. This situation creates the potential for unknown and unquantified Federal Reserve Water Rights to disrupt long established appropriative state water rights if or when the reservation uses are developed even though the rights may have been un-quantified, undeveloped, and unrecorded under state water rights laws for decades. Utah has completed Federal Reserved Water Rights settlement agreements on 10 of the 17 National Parks and Monuments and with other federal reservations. But, Arches National Park, Canyonlands National Park and Dinosaur National Monuments, Natural Bridges National Monument have pending Federal water rights claims that are not included in the accounting of Utah's remaining water rights. Rainbow Bridge National

⁴⁶ Managing the Colorado River in the 21st Century: Shared Risks and Collaborative Solutions, see at: <https://www.cobank.com/~media/Files/Searchable%20PDF%20Files/Knowledge%20Exchange/2016/Colorado%20River%20Report%20%20Mar%202016.pdf>

⁴⁷ [Ten Tribes Partnership, Colorado River water report](https://www.usbr.gov/lc/region/programs/crbstudy/tws/docs/CRB%20TTP%20TWS%20Front%20Matter%2012-13-2018.pdf)
<https://www.usbr.gov/lc/region/programs/crbstudy/tws/docs/CRB%20TTP%20TWS%20Front%20Matter%2012-13-2018.pdf>

Monument is also being negotiated. It is uncertain if National Forest Lands have any Federal Water Rights in the Green River. All of these unsettled Federal Reserve Water Rights need to be added to Utah's remaining Compact allocation before the remaining Ultimate Phase water rights are granted.

H. The Navajo Utah Water Rights Settlement Act.

The settlement Act was introduced a couple of years ago and has not been approved by Congress. It would do the following: • Settle all current and future claims by the Navajo Nation for water rights within Utah, thus precluding costly future litigation for all parties; • Provide the Navajo Nation with the right to deplete 81,500 acre-feet of water from the San Juan River a year. It is part of Utah's Colorado River Basin apportionment; • Authorize \$210 million in funding for water infrastructure on Utah portion of Navajo Nation to access the water, which will help provide clean drinking water; and • Require the State of Utah to contribute \$8 million towards the settlement (Utah has already approved the funding). This agreement must be approved by Congress and ratified by the Utah legislature and the Navajo Nation before it can be implemented.

I. The Northern Ute Tribe of the Uintah and Ouray Indian Reservation in Duchesne, Uintah and Grand Counties have Federal Reserved Water Right claims in Utah. The Northern Ute Tribe of the Uintah and Ouray Indian Reservation are the senior water rights holders in the Green River tributaries. Negotiations culminated in a settlement agreement approved by Congress in 1992. But it was never ratified by the tribe. Also, the proposed Ute Indian Water Compact of September 22, 2009 was never ratified either by the tribe. This agreement quantified water rights for the tribe limited to 470,594 acre-feet diversion rights and 258,943 acre-feet of depletion from the Upper Colorado River System of the Uinta and Lake Front Rivers and Duchesne River in Utah. Negotiation with Utah is for 105,000 acre-feet of depletion out of Utah's remaining share of Colorado River water rights. The priority date for the Ute Tribal Water Rights in the Green River is October 3, 1861.

J. Depletions

The amount of water Utah can use of its Colorado River allocation is determined by depletions. Water rights can be quantified through both diversion and depletion volumes of water, in acre-feet per year (AFY). A water right is permitted to "divert" a specific amount of water, a portion of which will be returned to the river depending on its use (i.e., through agricultural return flows or municipal wastewater treatment plants). The portion of the right that is consumptively used is considered "depleted" from the basin that will not return when it doesn't return to the river system. It is the amount of water that is lost from the hydrologic system based on the associated beneficial use. It is evaporated, transpired, incorporated into products or crops, or consumed by humans or livestock.

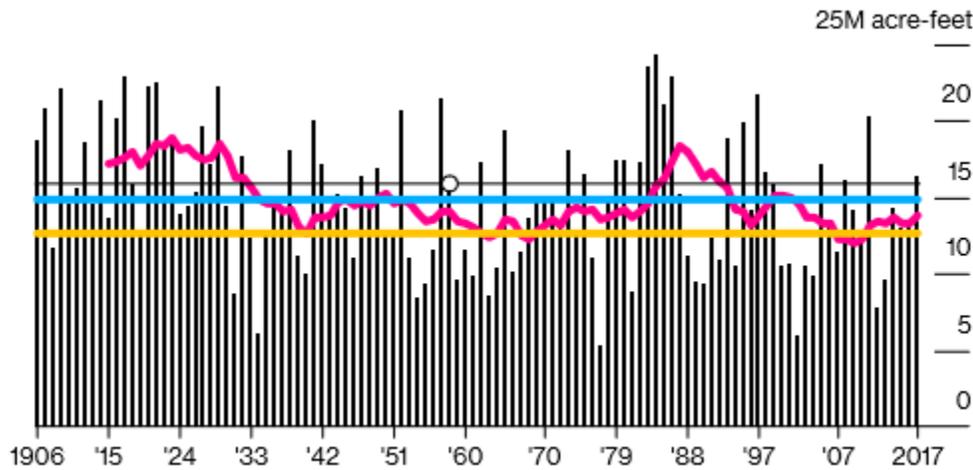
The amount of depletion for Utah allocation is now was estimated to be 1,369,000 AFY using a high flow of 15 MAFY at Lee Ferry.

(6 million acre-feet minus - 50,000 AF for AZ equals 5,950,000 acre-feet.
23% of 5,950,000 AF= 1,368,000 AF)

However, BOR’s chart in figure 2 shows (below) the natural flow at Lee Ferry is lower than 15 MAFY and is only 12.5 MAFY. ⁴⁸ Therefore, the physical water is not there for the 15 MAFY compact allocations.

Chart (figure 2)

- Annual Flow Above Lees Ferry, black vertical bars
- 10-Year Moving Average, red line
- 1906-1999 Average, blue line
- 21st Century Average (as of 2017), yellow line



Source: United States Bureau of Reclamation
Data is subject to change, last updated 3/18/2019

K. Utah’s Upper Basin Colorado River water rights are in disarray

Utah’s web site shows there is more water being used (depleted) than Utah’s allocation allows. The State’s Upper Basin Water Rights web site has 2.5 million acre-feet of approved depletions. But Utah is only supposed to deplete 1.369 million acre-feet a year. Conserve Southwest Utah was told that the web site is out of date, and the information cannot be relied

⁴⁸ <https://www.bloomberg.com/news/articles/2019-08-15/desert-farmers-trade-water-for-cash-as-the-colorado-river-falls>, 2019

upon. The state should provide more funding to water agencies to resolve this appearance of an over-allocation of its water rights.

Click here web page: see

<https://www.waterrights.utah.gov/distinfo/colorado/WRPriorityDDview.asp> " with new totals at the bottom of page:

- 6,120,394 acre-feet diversion; and
- 2,504,200 acre-feet depletions

Consequently, there may be significantly more approved water rights applications, which if developed could potentially exceed Utah's entitlement.⁴⁹ All of the approved city's water rights holders should be made aware of this over-allocation so they can implement water conservation measures to protect their existing water supply for the future.

Conserve Southwest Utah made formal GRAMA records request on what water rights exactly is Utah using of its 1.369 MAF allocation, and basically, the state does not know. This puts the claim that Utah has enough water in its allocation for the LPP to trade it with BOR in doubt. The lead and cooperating agencies must validate that Utah has this surplus water in its allocation to trade in the DEIS.

Information about the over-allocation includes a newspaper article and a PowerPoint presentation by the Utah Division of Water Rights :

An article in the Deseret News 2014 by Amy Joi O'Donoghue explains the problem with water rights: *The water question: The staggering problem of determining water rights.*⁵⁰ An excerpt:

"Your paper water right may look very big and supply everything you are asking, but the wet water, in reality, can be very different," Kent Jones, the state engineer over water rights, said.

The Colorado River, for example, holds 1.4 million acre-feet of water for Utah to put to use. There are applications approved for more than 2 million acre-feet, and about one half of that is currently in use. Jones said the imbalance has yet to be a problem because the water has not been developed — but the struggle will come with time, and those holding "junior" rights will go wanting."

⁴⁹ Water Right Issues in the Upper Colorado River Basin of Utah. See at:

<https://www.waterrights.utah.gov/meetinfo/m042005/summary.htm>

⁵⁰See at: <http://www.deseretnews.com/article/865617715/The-water-question-The-staggering-problem-of-determining-water-rights.html>;

Many of the files are outdated, which means there could be a big difference between what is in the file — paper water — and the actual water that exists or is available — wet water.

“We are growing so much as a state and there is so much demand for water, it is critical we know where these existing uses are and protect them,” said Mike Styler, executive director of the Utah Department of Natural Resources. “And there is really no new water to be had.”

Why should Utahns care? Because the nature of water rights is that there are far more rights than the water that actually exists, so the task is to determine what is real and what is not.

Of the 15 major watershed areas in Utah, just two of them have been researched and adjudicated, which means that the investigation and documentation work was carried out and a judge then issued a decree.”

The Utah Division of Water Rights in a 2005 PowerPoint presentation explains some of the issues on the over-allocation of its water rights.⁵¹

Utah claims it has 361,000 acre-feet to use of its allocation by using 15 MAFY. This 2005 chart illustrates the over allocation of Utah’s remaining Colorado River share of 361,000 acre-feet:⁵²

Potential Depletion, Approved Applications (Undeveloped)

<u>Applicant</u>	<u>Quantity (Ac Ft)</u>
San Juan County WCD	30,000
Central Utah WCD	29,500
Board of W R (et al)	158,000 Ultimate Phase
Wayne County WCD	50,000
Kane County WCD	30,000
Sanpete WCD	5,600
Uintah County WCD	5,000
Navaho	80,000
Ute Tribe	<u>105,000</u>
TOTAL	493,100, (which is above 361,000 af)

A water rights applicant is normally given 5 years to complete the project and place the water to beneficial use when a water right application is approved. However, in 2008 Utah passed a law to accommodate the fact that the LPP 1958 water right, which has not been put to

⁵¹ See at: https://www.waterrights.utah.gov/meetinfo/m042005/jdo_2005.ppt

⁵² **Upper Colorado River Basin Current Water Rights Issues Division of Water Rights April 2005** See at https://www.waterrights.utah.gov/meetinfo/m042005/jdo_2005.ppt

beneficial use for over 61 years. This LPP water right again is set to expire in 2020 because it hasn't been put to beneficial use. The state law Utah Code (73-3-12) allows water agencies 50 years to prove up on their water rights to show beneficial use. This was supposed to create some security to cities that they would get water in the future. But this is a false promise due to less water being in the system and Utah over allocating its share of the Colorado River. As water supplies continue to decline it is unclear who will be able to use the water for the long term. This issue should be analyzed in the DEIS.

L. The Central Utah Project (CUP), and Ultimate Phase- junior status

Both the CUP and Ultimate phase water rights depend on surplus high water from lakes, streams, and reservoirs in the Uinta Basin. The planners used the larger amount of annual flow of river water of 15 MAFY to make this decision; that would be enough high water left for the CUP and the Ultimate phase. But now we know the river does not provide that much water.

The CUP and the Ultimate Phase water rights are junior because the state allocated all the surface water rights before the CUP was built. There is a question that there isn't enough wet water left not being used to trade BOR for Ultimate Phase water service contracts. All the high water is going to the CUP or other senior water right holders, such as the irrigation companies. There is not any extra water not being used that Utah can exchange with Reclamation for the LPP. This issue needs to be analyzed in the DEIS.

Central Utah Project

“The Central Utah Project (CUP) is the one of the largest and most complex water resources development projects undertaken by the Bureau of Reclamation in the state of Utah. Region wide, the CUP is not the largest project, but the initial plans for the CUP were among the most complex especially given the amount of water the project was originally intended to deliver. The project is a network of tunnels, pipes, canals, pumps and reservoirs that supply water from the east side of the Wasatch Front to the Salt Lake City area.

The CUP was officially authorized by Congress for construction in 1956 under provisions of the Colorado River Storage Project Act (CRSP) Act (43 USC 620). Because of its size and complexity, Reclamation divided CUP into six units to facilitate ⁵³planning and construction: Vernal, Jensen, Bonneville, Upalco, Ute Indian, and Uintah. The Vernal, Jensen, Bonneville, and Upalco Units were authorized by the 1956 CRSP Act. The Uintah and Ute Indian Unit were later authorized by the 1968 Colorado River Basin Project Act.

Over the decades since the CUP's authorization, the changing political climate, budget priorities, and emerging environmental concerns have resulted in many changes to the project. The Vernal and Jensen Units were completed; plans for the Upalco, Uintah, and Ute Indian Units were never realized and the Ute Indian Unit was de-authorized; the purpose and components of the Bonneville Unit have evolved; and the passage of the Central Utah Project Completion Act in 1992 has altered the planning, oversight, and areas of responsibility for the Bonneville Unit.”⁵⁴

Ute Indian Unit

The Ute Indian Unit included a pipeline from [Flaming Gorge Dam](#) and Reservoir to the Uinta Basin. Because of both engineering and environmental challenges, the Ute Indian Unit was never constructed. Under the provisions of the [Ute Indian Rights Settlement](#), the United States settled with the [Ute Tribe](#) of the Uinta and Ouray Reservation for its failure to complete the Ute Indian Unit. However, Utah wants to give the water to towns in the Uinta Basin and the LPP instead of giving it to the Ute tribe.

M. Ultimate Phase Water Right No. 41-3479 (LPP)

Sarah Stock of Living Rivers explains the Ultimate Phase water right:

“These water rights for the Ultimate Phase of CUP were originally held by Reclamation. This water was originally 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. Thus far, a Ute Water Compact has not been ratified by all parties.

The Lake Powell Pipeline water rights total to 86,249 acre-feet of depletion and are held by the Utah Board of Water Resources.”⁵⁵

It is unclear how the BOR determined there was that much wet water left over in 1996 from CUP water right to assign such a large amount of water back to Utah. Again, planners used the higher annual flow of the river to be 15 MAFY. We question this assumption that there is any physical water to use and this issue should be analyzed in the LPP's DEIS.

Utah has 23% of the Upper Basin Colorado River flow. The 1958 Lake Powell Pipeline water right, which was allocated from the Ultimate Phase, is a “junior” water right. It is junior to many senior water right holders and is at high risk of being shut off as the water supply declines. Utah is ignoring this risk. As Colorado River flows diminish over time the LPP water right will be outranked by senior water right holders. Furthermore, the Utah Division of Water Rights indicated that the state has over-allocated its Colorado River water rights. In litigation, “junior

⁵⁴ CUP overview. See at: <https://cupcao.gov/TheCUP/overview.html>

⁵⁵ Living Rivers, Sarah Stock

water rights” holders will go wanting.⁵⁶ Precedent in water law shows that “paper” rights and “wet water” can be very different.

Securing water to build the LPP with the Ultimate Phase water right is contingent on Utah having 157,000 acre-feet of unused water in the Green River Tributaries. Utah is trying to trade seasonal high spring flows off the Uinta Mtn to Reclamation for more water all year long out of Flaming Gorge reservoir to develop the remaining Ultimate Phase water right 157,000 acre-feet, which includes the LPP. But, Utah over the past 61 years has already allocated those flows to other senior water right holders such as the CUP and other irrigation companies.

N. The Ultimate Phase/LPP water right No. 41-3479 should have lapsed 2009

In 2009, the BOR had a different position about the Ultimate Phase Water Right No. 41-3479. Reclamation stated in its protest letter of the water right that this water right should have lapsed in 2009 due to the over-allocation of senior water rights holders in this region. The LPP is a portion of this water right. BOR’s letter reads as follows:

Water Right No. 41-3479 is a segregated portion of the Flaming Gorge water right, Application to Appropriate No. A30414. This appropriation originally included both the storage of water in Flaming Gorge Reservoir and the beneficial use thereof for the “Ultimate Phase” of the Central Utah Project. After the “Ultimate Phase” was deauthorized, Reclamation assigned this portion of the appropriation to the Utah Board of Water Resources with the understanding that any portion of this water right not developed within 50 years of the original approval date (October 6, 2009) would lapse.

⁵⁶ See at: <http://www.deseretnews.com/article/865617715/The-water-question-The-staggering-problem-of-determining-water-rights.html>; *"Your paper water right may look very big and supply everything you are asking, but the wet water, in reality, can be very different," Kent Jones, the state engineer over water rights, said. The Colorado River, for example, holds 1.4 million acre-feet of water for Utah to put to use. There are applications approved for more than 2 million acre-feet, and about one half of that is currently in use. Jones said the imbalance has yet to be a problem because the water has not been developed — but the struggle will come with time, and those holding "junior" rights will go wanting."*

Reclamation is concerned that further extensions on the undeveloped portions of the Flaming Gorge appropriation could jeopardize the future of the Central Utah Project (CUP). To date, over \$2 billion dollars have been spent to develop the CUP, which supplies agricultural, municipal, and industrial water to millions of Utah residents in the Uintah Basin, Heber Valley, and Wasatch Front corridor. The key right for the CUP, Water Right No. 43-3822, has a priority date of November 11, 1964. If all the senior undeveloped water rights in the Green River and San Juan River Basins are developed, Utah would exceed its portion of the Colorado River Compact and the Central Utah Project water rights would be adversely impacted.

BOR protested the Ultimate Phase Water Right No. 41-3479 extension of time, for proof of beneficial use, beyond the 50-year limit (October 6, 2009). For this reason, Utah made all these Ultimate Phase/LPP water rights junior to the Central Utah Project. All Ultimate/LPP water rights holders also have to show proof of beneficial use by 2020. The BOR also mentioned in its protest letter that if all senior undeveloped water rights in Green River and San Juan are developed, Utah would exceed its portion of the Colorado River Compact. The BOR also protested every water right that was segregated from the Ultimate Phase Water Right No. 41-3479, and Utah made them junior to the Central Utah Project.

According to a summary by a water official, there are significantly more approved water right applications than Utah's allocation, which, if developed, could potentially exceed Utah's entitlement.⁵⁷ BOR needs to resolve this issue before the LPP's Contract is approved.

O. The Ultimate Phase water rights expire in 2020.⁵⁸ What does that mean?

Utah Code 73-3-8 (2) (a) says after the water right expires it is no longer valid. A water rights holder would have 60 days to reapply.⁵⁹ Therefore, all the holders of water rights that were given out using these rights will all have to reapply for another extension. But they have to show that the wet water is available. As water supplies decline this will become a critical issue on regarding who can continue to divert the water.

BOR requested that the state water engineer to reconsider approval of the change application. BOR protested a water right and sent a letter of concern to the Utah State Water Engineer about the over allocation of Upper Basin Green River water rights. See the Application for water to develop OIL shale Water Right No.49-258 for 10,000 acre-feet.⁶⁰

⁵⁷ Meeting water official discussion about over-allocation. See at:

<https://www.waterrights.utah.gov/meetinfo/m042005/summary.htm>

⁵⁸ See water right date at: https://www.waterrights.utah.gov/asp_apps/wrprint/wrprint.asp?wrnum=41-3479

⁵⁹ Utah Code 73-3-8 (2) (a) (i) the essential purpose of the original application has not been satisfied;..and (ii) the need for an extension is not the result of any default or neglect by the applicant; and (iii) the water is still available.

(e) No extension shall exceed the time necessary to satisfy the primary purpose of the original application. See at: <https://le.utah.gov/xcode/Title73/Chapter3/73-3-S8.html>

⁶⁰ See at: <https://www.waterrights.utah.gov/docImport/0569/05693326.pdf>

However, the state water engineer ignored the BOR's protest. See the letter of BOR's protest the approval of the change application.⁶¹ These letters show the great concern about the over-allocation of the Green River.

P. Connected Federal Actions and Cumulative Actions

The DEIS must include an analysis of the connected actions that would include the two BOR service contracts UDWR is requesting.⁶² These contracts have to go through the NEPA process, but, thus far the geographic scope of these contracts has been left out because the contracted water is in Flaming George Reservoir. Since this BOR service contract is a purpose of DEIS the accurate geographic scope of the project and its impact is from Flaming Gorge Reservoir not only from Lake Powell Reservoir.

Utah is proposing two service contracts to utilize its water rights from the Ultimate Phase Central Utah Project of 158,800 AFY and draw the water from Flaming Gorge Reservoir. These water rights have to show proof of beneficial use by 2020 and were undeveloped seasonal unreliable high water rights. However, UDWR is asking BOR to give them permanent reliable water rights out of Flaming Gorge Reservoir all year long instead.

The two service contracts for the of Ultimate Phase of CUP include:

- A BOR 50-year service contract for Utah to draw out 72,641 AFY from Flaming Gorge Reservoir to use for development along the Green River, known as the Green River Block (GRB). (a portion of application Water Right No. 41-3479).
- A BOR 50-year service contract to develop the LPP that would draw 86,249 AFY from Flaming Gorge Reservoir, let the water flow downstream about 400 miles to Lake Powell, and then draw water for LPP from Lake Powell (the remaining portion of application Water Right No. 41-3479).

⁶¹ See letter at: https://www.waterrights.utah.gov/docImport/0563/05632205.pdf_page

⁶² 43 CFR § 1508.25 Scope. Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement. The scope of an individual statement may depend on its relationships to other statements (§§ 1502.20 and 1508.28). To determine the scope of environmental impact statements, agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include:
(a) Actions (other than unconnected single actions) which may be:
(1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification. (2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement. (3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.

However, the Coalition is concerned that there is not enough water in Flaming Gorge Reservoir for the Ultimate Phase CUP water right. This is due to over-allocation, fewer winter storms, reduced snowpack and stream flows, and the use of an outdated hydrological model.

The Effects from the two contracts on the natural resources of the Colorado River must be analyzed in the DEIS.

V. The Lake Powell Pipeline Water Exchange Contract with BOR

A. Flaming Gorge Water Right

One of the purposes of the DEIS is to approve the State of Utah's request to buy water out of the Colorado River Storage Project's (CRSP) Flaming Gorge Reservoir for the Lake Powell Pipeline. This Federal notice explains the terms of the contract.

The Public Federal Notice of Intention to develop an EIS to buy water for the LPP:

“UBWR has requested a water exchange contract with Reclamation. Under the exchange contract, UBWR would forbear the diversion of a portion of the natural flows to which UBWR is entitled and allow these flows to contribute to meeting the Endangered Species Act Upper Colorado River Recovery Implementation Program requirements in the Green River. In exchange, UBWR would deplete an equal amount of water released from Flaming Gorge Dam throughout the year and available at Lake Powell. This exchange contract would not entitle UBWR to call for releases from Flaming Gorge.”⁶³

However, UDWR has never disclosed where the water is; it wants to exchange with BOR. Our preliminary research indicates that the Utah Division of Water Rights has over-allocated the Green River tributaries, and there isn't any extra high water to exchange for this contract because the annual flow of river has declined and all the high water is being fully utilized.

Conserve Southwest Utah did a Government Records Access and Management Act (GRAMA) request to the UDWR a year ago and asked for the specific water rights they are exchanging. Their response thus far is that the records from the UDWR and the Division of Water rights do not agree with each other.

The Coalition is concerned the BOR is not considering cumulative impacts on people and the environment because they are using annual flows of the river of 15 MAFY that is much higher than the annual today. The environment consequences will be much different if the

⁶³ Notice of Intent: <https://s3.amazonaws.com/public-inspection.federalregister.gov/2019-26357.pdf>

current lower annual flows of the river are used. There are already new provisions in the Drought Contingent Plan (DCP) where states are being cut now and asked to reduce their allocated water use. The purpose of the DCP is to leave water in Lake Powell, but, this proposed exchange contract appears to be conflict with that purpose by taking water out of Lake Powell.

The cooperating agencies must consider this LPP's withdrawal and its impact on the purposes of the CRSP in the DEIS. Also, the effects on people and the environment with an annual flow that considers a range of climate scenarios. The priority for the CRSP is to have enough water to meet the compact's provision that the Upper Basin states must provide a certain amount of water to Lower Basin states. The proposed contract appears to be in conflict with that goal. Therefore, these contract provisions must be analyzed in the DEIS to clarify who has priority rights to divert water as the water supply declines.

Specific comments on the Contract include:

RECITALS

CONTRACT g., Page 2.

g. This recital states the 1996 agreement for the water right includes a provision "*Upon release from Flaming Gorge Reservoir said water right can be developed, diverted perfected by the State of Utah as permitted by law.*" However, in the previous 10 years the project has only been studied from Lake Powell to St. George. If the water for the proposed action has to come from Flaming Gorge Reservoir then the scope of DEIS must be from Flaming Gorge Reservoir.

CONTRACT j., Page 3.

j. It is not in the United States or other stake holders' best interest to continue to over-allocate the Colorado River. This was also not the intent of Congress and the *Laws of River* to be selling water that is not physically in the CRSP system.

CONTRACT Page 4. 4. TERM

The Contract remains in effect for 50 years, although there is no proof Utah will be able to pump water for 50 years using a 1958 junior water right out of Lake Powell. There is nothing disclosed in this Contract regarding how projected lower flows; or lower reservoir levels will curtail use of this water right. This Lake Powell Pipeline water right will subordinate to other senior water rights holders when water flows, or reservoir elevations decline. Utah claims it will be able to divert water in dire conditions in Lake Powell without any facts to justify this position. Its intake structure in Lake Powell withdraws water near dead pool. This Contract provision needs to be clarified and rewritten to specify what restrictions would apply to withdrawing water from Lake Powell as water declines in dire conditions.

CONTRACT Page 5.

8. RATE AND METHOD OF PAYMENT

How was the rate calculated? It seems the rate of \$19 per acre is low compared to other BOR Contracts. It should be disclosed how the rate was established and what other projects have been charged. Also, what are the costs of the CRSP used to determine the rate in this Contract so the public can judge if the rate is fair; or subsidized by the nation's taxpayers?

For instance, the Upper Gunnison River Water Conservancy District Contract No. 04-WC-40-010 was charged a much higher rate of \$71.68 per acre foot.

Excerpts from their Contract:

The first year per acre-foot rate of \$71.66 will be charged for any approved third-party contract and is calculated from an amortization of the total debt service amount of \$611,745.00, using the annuity due formula, a 40-year payment term, and an interest rate of 5.49 percent, which is the 2001 annual average rate for 20-year Treasury constant maturities.

7. MEASUREMENT AND RESPONSIBILITY FOR DISTRIBUTION

(c) This contract and all water taken pursuant hereto shall be subject to and controlled by the Colorado River Compact, dated November 24, 1922, and proclaimed by the President of the United States June 25, 1929, the Boulder Canyon Project Act approved December 21, 1928, the Boulder Canyon Project Adjustment Act of July 19, 1940, Upper Colorado River Basin Compact dated October 11, 1948, the Mexican Water Treaty of February 3, 1944, and the Colorado River Basin Project Act of September 30, 1968, Public Law 90-537.

(d) In the event water available to the District is required to be curtailed under and by reason of the provisions of the foregoing acts, including the reaching of maximum use of water allotted to the State of Colorado, no liability shall attach to the United States for such curtailment, and the District agrees to reduction of the amount of water taken hereunder as the Secretary determines necessary to comply with the provisions of said acts.

This could also be an opportunity to add an escalation clause to the Contract so that as the elevation of Lake Powell go lower the price of acre foot of water should go up. Pricing is a good tool for conservation.

CONTRACT Page 14.

(n) CONSTRAINTS ON THE AVAILABILITY OF WATER

This section should describe at what reservoir level Utah could continue to pump water out of Lake Powell and when it could not. Utah claims it can pump water from Lake Powell in dire conditions from near Dead Pool.

The DEIS must include an analysis of how the Upper Basin Project Act 602 (a) storage in Lake Powell would restrict pumping below elevation of 3,630 ft when the water is less than 14.85 MAF for the LPP. In the future the entire capacity of Lake Powell will be needed to meet 602 (a) storage requirements; a trigger point should be discussed in this DEIS. Also include an analysis of all the other agreements for CRSP's water in priority order, the Drought Contingency Plan, the Interim Guidelines and the ability to maintain the minimum power pool elevation for power.

The DEIS should disclose how senior water rights holders would restrict pumping water for LPP out of Lake Powell and who they are?

WATER SUPPLY SHORTAGE

There is nothing in the Contract that explains what will happen to LPP water right in a shortage. Such a clause should be included on this Contract.

ADD –WATER CONSERVATION

There is an opportunity to add a water conservation clause similar to what is in the Contract shown below. Cities receiving water would have to have a comprehensive Water Conservation Plan with firm targets. For Example:

THE UTE MOUNTAIN UTE TRIBE, ANIMAS-LA PLATA PROJECT, ⁶⁴ page 19

WATER CONSERVATION

Prior to the delivery of water provided from or conveyed through federally constructed or federally financed facilities pursuant to this contract, the Tribe shall develop a water conservation plan, which shall contain definite water conservation objectives, appropriate economically feasible water conservation measures, and time schedules for meeting those objectives.

BOR HANDOUT AT CONTRACT MEETING IN ST GEORGE

In the BOR handout the power point picture titled *Pumping Cost Savings Due to Lake Powell* doesn't make sense. The illustration shows a full Lake Powell when on the average it is only half full. The LPP intake pipe is estimated to go down to near Dead Pool and that is not shown in the picture. Thus, the picture doesn't represent the proposed project. Utah is trying to show in this illustration if there was no Lake Powell then they would have to pump water from the river itself and this is a saving. The LPP project consumes a lot of power and isn't much of power producer. Please explain in the Contract how there are real cost savings from the LPP. The example used by Utah can't be considered a valid Energy Saving Assessment for the project. When FERC was the licensing agency the Pumped Storage Project and the power it could have

⁶⁴ See at: https://www.usbr.gov/uc/wcao/pdfs/contractDocs/ALP_UMUT_DRAFT_Contract_11.2017.pdf

produced were used by UDWR to justify the cost of the LPP and provide a positive cost/benefit analysis. Now the project has changed and is a net energy user. The Contract should show how there are real cost savings from the LPP. The example used by Utah in its handout can't be considered a valid Energy Saving Assessment for the project.

The Contract includes many of Utah's unsubstantiated claims. In this 50 year Contract the BOR must address that Utah's share of Colorado River will decline over this 50 year period and also consider: the other obligations that have higher priority dates than the Lake Powell Pipeline water right in a drought along the Green River; also consider that the other Upper Basin states upstream that want to develop their remaining share of the Colorado River; and Utah must address its over allocation of its Colorado River *approved* water rights.

The BOR should complete a 2020 Hydrologic Determination for the LPP as to the availability of water under this long-term service contract. This would determine if Utah has any water remaining of its Colorado River allocation to trade.

The Contract states the LPP's priority date of 1958 will not change and as described in these comments it is a junior water subject to being shut off as water supplies decline.

The Contract reads:

- b. This Contract does not alter, modify, or amend the Assigned Water Right's priority date, points of diversion, nature of or places of use, or any other conditions not specifically mentioned in this Contract, nor does it result in any relinquishment of the Assigned Water Right.

The Contract is also contingent on Utah having an undisclosed 157,000 acre-feet a year of unused water and it doesn't.

The Contract reads:

6. EXCHANGE OF WATER

For this exchange, the Board will forbear the depletion of a portion of the Green River and tributary flows to which it is entitled, and instead allow that portion of the Compact Entitlement Water rights to contribute to meeting the ESA Recovery Program Requirements in Reaches 1 and 2. This will assist Reclamation in meeting its obligations under the 2006

ROD. In exchange, the Board is authorized to deplete an equal amount of Project Water that is released from the FG Unit and available for exchange at Lake Powell. On an annual basis, the direct flows that will be left in the river and used to meet ESA requirements will equal the FG project releases used for depletion by the Board under the Assigned Water Right. The Board will not make calls for releases from FG Unit storage; rather it will use the Project Water as released in accordance with the flexibility in Reclamations operations under the 2006 ROD.

The decision makers did not use the current science that water supplies have already declined in the 2006 ROD therefore the decision that there is enough water in Flaming Gorge Reservoir to sell to Utah is not based on the facts. As water supplies decline there will be new federal changes to operation of CRSP projects or to the ESA requirements for the Green River fishes. How will the LPP and Green River Block Contracts would be affected by such changes and must be analyzed in the DEIS. This could mean that there is no guarantee the water will be available for the LPP or the Green River Block Contracts over the long term.

A provision in the contract says: “This contract is needed to resolve a long standing disagreement between Reclamation and the State regarding use of the water right assigned in 1996.” For over 61 years the State of Utah didn’t think it had to pay for water because it was rightfully Utah’s water. In 2016, the State changed that position and asked BOR for a service contract and will pay annually a sum of about \$19 an acre-foot.

The Contract terms need to be analyzed and disclosed in DEIS such as how was the price per acre of water determined.

B. Green River Block Water Exchange Contract with BOR⁶⁵

“Reclamation held the Ultimate Phase water rights until 1996, when they transferred them to the Utah Board of Water Resources who then opened these rights up for development in Utah. Some water has been put to use by private users along the Green and Colorado Rivers, and some has been claimed by public water suppliers but not yet developed. These rights are collectively referred to as the Green River Block. All of the undeveloped rights from the Ultimate Phase have reverted back to the Utah Board of Water Resources and it is planning on using them to supply the Lake Powell Pipeline for consumptive use in Washington and Kane Counties. 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. According to Reclamation, all of the undeveloped Ultimate Phase water rights were supposed to lapse on October 6th, 2009. The majority of the rights being discussed in the Green River Block should have lapsed on that date; the exceptions are the ones already developed and being put to

⁶⁵ See at: <https://www.usbr.gov/uc/envdocs/ea/20190100-GreenRiverBlockWaterExchangeContract-FinalEAandFONSI-508-PAO.pdf>

beneficial use by private users, but Utah changed the law to allow for extensions of time for public water suppliers to 50 years. However, all of these water rights are again about to expire in 2020. They can reapply but they have to show the water is available and we suspect there isn't any wet water for them to use.

The Green River Block water rights total to 72,641 acre-feet of depletion held by private and public water suppliers, mostly along the Green River in the Uinta Basin in Utah.”⁶⁶

Again this contract is contingent on Utah having enough unused high water to trade for water out of Flaming Gorge Reservoir for the Green River Block Contract.

The Environment Assessment (EA) states:

“If the water exchange contract is implemented, the State would forebear the depletion of a portion of the Green River and tributary flows to which it is entitled under Article XV(b) of the Upper Colorado River Basin Compact which expressly recognizes each compacting state’s rights and powers to regulate within its boundaries the appropriation, use, and control of water apportioned and available to the states by the Colorado River and Upper Colorado River Basin Compacts. This forborne Compact Entitlement Water would contribute to meeting the ESA Recovery Program Requirements in Reaches 1 and 2, thereby assisting Reclamation in its obligation under the FGROD [Flaming Gorge Record of Decision]. In exchange, the State would be authorized to deplete an equal amount of Colorado River Storage Project (CRSP) water from FG releases throughout the year as water is needed for the Green River Block portion of the assigned water right.”⁶⁷

The “natural flows to which UBWR is entitled” is referring to the Utah apportionment under the existing Law of the River, which assumed the annual river flows which science has conclusively proved do not exist. The same Law of the River established mandatory delivery to California, recognizing their senior water claims. Utah may not be legally entitled to any additional water out of Flaming Gorge Reservoir unless it can conclusively demonstrate that such withdrawals will not reduce the required deliveries to the Lower Basin and other senior water rights holders.

The problem with already approving the Green River Block Exchange Water Contract is the same problem we have described in great detail in these comments because there is no wet water for this Contract. The reason BOR determined there are not any effects to the human and natural environment from the implementation of the Green River Block Exchange Water Contract is that BOR assumed the Contract would be fulfilled by using a lot of water that doesn't exist by using the 100-year average for the annual flows.

The Green River Block Environment Assessment (EA). state:

⁶⁶ Sarah Stock, Living Rivers

⁶⁷ See at: <https://www.usbr.gov/uc/envdocs/index.html>. page 9.

*“Hydrology of the Green River is the driver of effects to the other 14 resources. Hydrology was analyzed using observed hydrologic data from 1906-2015.”*⁶⁸

Therefore, due to the lower annual flows in the river Utah doesn't have any high water tributary flows left to which it is entitled under Article XV(b) of the Upper Colorado River Basin Compact. Utah makes statements it has have the water but doesn't disclose where it is or give any evidence of its existence. The lead and cooperating agencies must require that Utah disclose where this remaining high water is located that it wants to trade with BOR.

The proponents using this higher annual flow of the river 15 MAFY that everyone agrees is no longer valid can't be used to evaluate the impacts of the Contract.

Due to the lower annual flows of river, it appears from our research that this Green River Block Contract of 72,641 acre-feet water right from the Ultimate Phase of the Central Utah Project (A30414d) is no longer present in the river system. This is due to reduced flows from rising temperatures, over-allocation, and a 1958 LPP water right, which is junior to other senior water rights holders; and unsettled Federal Reserved Water Rights claims of Indian tribes and other Federal reservations. Thus, this is a paper water right that Utah is not entitled to under the Compacts because it is not tied to any wet water.

For these reasons, this water right cannot be used for this water rights exchange. In the previous Bureau of Reclamation studies, there was a call for action and a statement that indicated the “apportioned water in accordance with the Law of River exceeds the approximate 100-year average flow of the river of 15 million acre-feet year (MAFY) at Lee Ferry and is 16.4 MAFY.”⁶⁹ “The Basin faces a wide range of plausible future long-term imbalance between supply and demand. This imbalance computed as a 10-year running average ranges from no imbalance to 6 million acre-feet (MAF) with a median of 3.2 MAF in 2060.”⁷⁰ However, these studies by the BOR that illustrate the decline of future water supplies are being ignored in decision making to sell more water in these water contracts.

More recent studies have shown that there has been 16.5% less water in the Colorado River the last 100 years.⁷¹ Therefore, a current analysis should be completed in the DEIS before these service contracts are signed.

⁶⁸ Green River Block Water Exchange EA, page 3 see at: <https://www.usbr.gov/uc/envdocs/index.html>.

⁶⁹ Colorado River Basin Stakeholders *Moving Forward* to address Challenges identified in the Colorado River Basin Water Supply and Demand Study, Phase 1 Report: Executive Summary, Bureau of Reclamation, May 2015, page 3

⁷⁰ Colorado River Basin Stakeholders *Moving Forward* to address Challenges identified in the Colorado River Basin Water Supply and Demand Study, Phase 1 Report: Executive Summary, Bureau of Reclamation, May 2015, page 3

⁷¹ Mu. Xiao, Udall, Lettenmaier, On the causes of declining Colorado Stream Flows, he Colorado River is the primary surface water resource in the rapidly growing U.S. Southwest. Over the period 1916–2014, the Upper Colorado River Basin naturalized streamflow declined by 16.5%, despite the fact that annual precipitation in the

Flaming Gorge Reservoir

In the BOR's Green River Block exchange contract, it claims that there will be no adverse effects due to this exchange because of the 2006 Flaming Gorge EIS Record of Decision (ROD).

BOR describe the exchange this way:

"The proposed project will not change the releases of Flaming Gorge stored water to the Green River, which will continue to occur as specified in the 2006 ROD. Therefore, effects of Flaming Gorge releases to the Green River will remain the same as those previously analyzed in existing Reclamation models and covered by the 2005 Flaming Gorge EIS."

The Flaming Gorge ROD was completed in 2005, but according to a 2007 letter ⁷²from Reclamation, it is uncertain how much water is available in Flaming Gorge Reservoir. The letter reads, in part:

A certain degree of uncertainty always surrounds yield studies. This analysis used an unusually long and accurate historic record. The modeling was also at a relatively high level of detail. The water supply may be further reduced or impacted by the outcomes of the future National Environmental Policy Act and Endangered Species Act processes associated with this project, and all water supply numbers should be considered preliminary until that process is completed. As one would expect, there is a degree of uncertainty beyond the original 40-year term of the water service contract. The potential contract for this water would reflect this uncertainty and the need for reevaluation at the time of contract renewal.

Our total estimated amount of water available from Flaming Gorge for the next 40 years is relatively small at 165,000 acre-feet per year. Please find enclosed our draft analysis for your review and comment. Mr. Dave Trueman, Manager of the Resources Management Division, is available at 801-524-3759, if you have questions or would prefer a briefing.

However, the conditions in the Colorado River Reservoirs system have changed significantly during the last 15 years since the ROD was completed and the local BOR has not yet recognized the change in its decision making. The circumstances surrounding the operation of the Colorado River system reservoirs have been changing as well

The Coalition is concerned that this hydrological modeling used to determine how much water is left in the Flaming Gorge reservoir's water availability analysis is flawed because it used the 100-year historical average of 15 MAFY at Lees Ferry. However, more recent studies have shown that there has been 16.5% less water in the last 100 years.⁷³ Therefore, a current analysis

UCRB over that period increased slightly (+1.4%). 2018 see at:
<https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2018WR023153>.

⁷² Letter from BOR to Upper Colorado river Commission, see at:
<http://www.riversimulator.org/Resources/UCRC/UCRCflamingGorgeWaterAvailabilityReclamation2007.pdf>:

⁷³ Mu. Xiao, Udall, Lettenmaier, On the causes of declining Colorado Stream Flows, the Colorado River is the primary surface water resource in the rapidly growing U.S. Southwest. Over the period 1916–2014, the Upper

should be completed in the DEIS using lower annual flows and a determination who has the senior water rights to the water in flaming Gorge reservoir and how there physically is.

VI. The Effects to Natural Resources from the LPP

The effects to natural resources from the construction, the operation and maintenance of the LPP must be analyzed in the DEIS.

The EIS should provide an in-depth analysis of the following elements:

A. Water Resources

- Effect of pollution to Navajo sandstone aquifer under the Hurricane's sewer lagoons due to higher levels of water from the LPP.
- Effects of evaporation above and subsurface infiltration below Sand Hollow and Quail Reservoirs.
- Effects of the potential loss of surface water to evaporation above and subsurface infiltration below the proposed LPP pump stations storage reservoirs.
- The potential for subsurface pollution to Sand Hollow Reservoir, wells and aquifer from chemicals used to kill invasive mussels.
- Increased evapotranspiration losses from Quail Lake and Sand Hollow Reservoirs that would occur if the LPP maintains a larger volume of water in these reservoirs than was stored under pre-LPP conditions. Will another reservoir and treatment plant have to be built, and at what extra cost to residents?
- Effects of project construction, operation and maintenance on declining water quality in Lake Powell and in the Green and Colorado Rivers in all downstream sections including through the Grand Canyon as a result from withdrawing low TDS water from near the surface and near dead pool of Lake Powell;
- Effects should include (but not be limited to) Interstate and International salinity control agreements.
- Effects of potential water right claims and disagreements from delivery of Upper Basin water to the Lower Basin as the project does.

Colorado River Basin naturalized streamflow declined by 16.5%, despite the fact that annual precipitation in the UCRB over that period increased slightly (+1.4%). 2018 see at: <https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2018WR023153>.

- Effects of increased cost of drinking water regulation standards and treatment requirements of pollutants in Lake Powell as the project plans to draw water near dead pool such as arsenic, selenium, uranium and other compounds that would increase operation and maintenance costs over the life of the project.
- Effects of water quality on human health of Lake Powell's chemicals in the water. In addition to reduced storage capacity, scientists have observed increasing concentrations of chemical pollutants in Lake Powell when reservoir levels drop. The DEIS should do an in-depth analysis the potential ramifications of increased health risks and drinking water treatment costs associated with low reservoir levels.
- Effect of LPP drawing water below minimum power pool elevation and effect on Pipeline's legal priority to continue to draw water from Lake Powell.
- Effects of the LPP system expanding and being able to tap other aquifers elsewhere in the two counties and in Arizona and move that water via the LPP to other areas.
- Effects of changes caused by the building of the pipeline's infrastructure in hundreds of washes that deliver water to plants and wildlife that will be totally cut off from water.
- Effects to flash floods and surface water flow through washes, canyons, and sheet-flow across the desert during extreme storm events, so that natural resources on BLM lands are not damaged. Culverts should be described in detail, with respect to size and design, to avoid flood debris clogging, blow-outs, and that could impact adjacent natural resources.
- Effects on streams, dry washes, springs, seeps, and riparian areas should be mapped, that will be impacted by pipeline's infrastructure should be mapped. All avoidance measures, mitigation measures, and best management practices should be detailed in order to prevent significant impacts to these water resources.
- Effects of where construction water for the pipeline will come from, and how many gallons or acre-feet per month. Will groundwater be pumped in area wells for use in construction, or will water be trucked in from another source?
- Effects on ground water due to all the cement needed for the project. A conceptual groundwater model of quantity recharge of springs, seeps, and surface flows within and adjacent to the pipeline should be developed and used as a basis for impact analysis for the proposed project.

The analyses of hydrology and water quality need to identify and analyze all of the project's impacts. The DEIS must include avoidance, minimization and if necessary, mitigation measures, to offset any impacts.

B. Water Quality

The Coalition is concerned that to deter quagga mussels, chemicals will have to be applied to water at the pipeline's intake tunnels and at the four pump stations. There will be four booster pump stations with a chemical room that would also have a buried forebay tank, buried surge tanks, (pig retrieval, used to clean the pipe), and a surface overflow detention basin. The LPP pipe size is oversized and will leave space for quagga mussels to attach to the walls of the pipe. There are also questions about whether moving water will even work given that so little water is projected to be needed per year. The cost of maintenance to prevent mussels and protect water quality have not been included in the studies.

Since UDWR claims it can draw water near dead pool in Lake Powell, in the DEIS should require an analysis of water quality at these low elevations. Also, the fish in Lake Powell have mercury in their flesh. Therefore, water quality tests for chemicals and mercury should be performed at Lake Powell.

- The analysis of the consequences of putting LPP water that has chemicals in it into an artificial aquifer recharge project below Sand Hollow reservoir should be analyzed in DEIS.
- Effects on water quality parameters, including quagga mussel invasion and potential chlorine treatment, on the Virgin River resulting from increased output from the St. George wastewater treatment facility.
- Effects of quagga and other invasive mollusk species infesting existing water delivery systems within the three counties.
- Effects on water quality from quagga mussel waste products (e.g. sulfites, sulfates, nitrogen, ammonia, etc.) and decomposition within the LPP and their ability to spread toxic algae causing problems with drinking water supplies.
- Financial and human health effects of chemical and/or other mussel treatments on water quality parameters in Kane, and Washington Counties.
- Effect on project design, construction, operation and maintenance activities and costs related to minimizing and managing for possible quagga and other invasive mussel species infestation.

- Effect on the construction, operation and maintenance of municipal water supply systems in the two counties after possible introduction of invasive mussel species
- Effect on the operation and maintenance of Sand Hollow and Quail Creek Reservoirs resulting from introduction of invasive mollusk species
- Effects of quagga mussels and mussel shells entrained in system on pumping, and on-line hydropower plants and conveyance facilities from Lake Powell and effects to community infrastructure.
- Analysis of the effects on fish and other aquatic populations of mussel infestations resulting from the LPP as a vector.
- Effects on pumping costs, conveyance and pressure management facilities resulting from intentional physical and/or chemical removal of quagga mussels from LPP.
- Analysis of mussel removal effectiveness at the Hoover Dam and in the Great Lakes region, including the effectiveness of chlorine and other chemical or physical treatments at removing or controlling quagga mussels.
- Effects of each proposed alternative on the potential proliferation differentials of the mussels in each alternative.
- Effect of the economic impacts of the mussel on aquatic resources, i.e. loss of species.
- Effect to recreational fisheries due to population crashes due to mussels.
- The impact of increasing levels of salinity (resulting from decreased flows in the Colorado River basin) on additional energy used, cost incurred, and greenhouse gases emitted for water treatment.
- Effects of LPP crossing the Paria River at Highway 89, where there is a proposed LPP drain valve or other drainages. We are concerned that quagga mussels removed from the LPP may get into Paria River or into Kanab Creek at that crossing or in other drainages where the many drain valves will be located. The studies claim the Paria River is mostly dry, but this is not accurate. It always has some water in it.

C. Archeological Resources

The DEIS should analyze the impact of The LPP will crossing the Indian Tribes' aboriginal territory the length of the proposed pipeline. Many sacred sites may be destroyed. A 250-foot-wide corridor was surveyed for archeological sites. They found 332 sites recorded, 246 sites eligible for the National Register of Historic Places, 86 sites were found not eligible.

D. Vegetation Community Revegetation

The DEIS must include clear and measurable success criteria for any proposed revegetation. It should detail all native vegetation and revegetation activities associated with building the LPP to mitigate all construction activities. Only locally-sourced native seeds should be used.

If revegetation efforts are proposed to be used as mitigation, the DEIS must include a clear and measurable revegetation plan with success criteria that include a clear and measurable time-frame for establishment, maintenance, monitoring and ultimately a fully functional revegetation site. We are concerned that restoration of the scar on land from building the LPP using plants in these arid lands may not be possible.

The DEIS must include the vegetation mapping for the proposed project and all proposed mitigation areas, in order for the public and decision makers to be adequately informed of the impacts and mitigation adequacy. The mapping must be at a large enough scale to disclose unique microhabitats. Upland vegetation, riparian areas and other unusual plant assemblages should be mapped at such a scale to provide an accurate accounting of the proposed impacts and mitigation. A half-acre minimum mapping unit size is recommended, such as has been used for other development projects.

Current surveys must be included in the DEIS to be implemented and utilized in combination with existing data in order to evaluate the existing on-site conditions. Ongoing seasonally appropriate vegetation surveys and monitoring would also need to be implemented as part of the mitigation and management requirements at least every 5 years.

Impacts to specific vegetation types and soil crusts must be mitigated adequately by type. Specific management prescriptions then need to be developed and included in the DEIS to conserve and protect project area resources and where enhancement of resources is necessary for mitigation purposes.

E. Noxious Weeds and Invasive Species

An Integrated Weed Management Plan for the revegetation should be developed as part of the NEPA process and included in the DEIS, so that the public may participate in reviewing this important document. We are concerned the revegetation of pipeline's scar on landscape would be impossible without a clear plan to monitor the success of any revegetation.

F. Soils

In past FERC reports, it described the extent of the excavated volumes from trenches and tunnels to build the project. The excavated volumes would be enough to build a 2-lane road from Seattle to Miami or a 4-ft. wide sidewalk around the Earth at the Equator with the excavated, blasted soil and rocks from one of the most scenic landscapes in the west.

The project will have extensive exaction of soils to lay the pipeline in the ground. It will use more cement than was used to build Hoover Dam. For example, the BOR described that 4.5 million cubic yards of concrete were used to build Hoover Dam. The excavated volumes from the trenches and tunnels needed to build the project of 6 million cubic yards is expected to be more than the total size of the concert used to build Hoover Dam or the Panama Canal (5000 cubic yards).⁷⁴

Figure 17. FERC Study Report 4. Table 3-14.

Alternative LPP Alignments	South Alignment	Highway Alignment	Corner Alignment
Total Excavated volume from tunnels (cubic yards)	6,084,996	6,144,985	

- Effect of construction and heavy equipment that would disturb soils and allow invasions of these invasive weeds. Biological soil crusts that are broken up can allow seeds of cheatgrass to get a foothold and increase. The DEIS should describe all avoidance, best management practices and mitigation measures towards halting any increase of introduced plants and noxious weeds. The DEIS must clearly prohibit the introduction of noxious weeds.⁷⁵ This is especially important because of the nature of these fragile areas that would be hard to revegetate.
- Effects on Biological soil crusts that are a vital part of current living desert ecosystems, and they function to hold soil surfaces intact in the face of wind and water erosion, prevent dust storms, keep out invasive species such as cheatgrass, retain soil moisture and

⁷⁴ See at: <http://www.american-historama.org/1929-1945-depression-ww2-era/hover-dam.htm>

⁷⁵ <https://ag.utah.gov/farmers/plants-industry/noxious-weed-control-resources/state-of-utah-noxious-weed-list/>

provide safe sites for seed germination. How would the construction of the pipeline avoid or mitigate the destruction of biological soil crusts?

We recommend that soil crusts are conserved, protected, and restored to perform vital functions such as enhancing infiltration, maintaining soil stability, and facilitating plant growth or re-establishment.

G. Geology

- Effects of proposed storage reservoirs in Kane and Washington Counties on the potential for subsurface recovery through wells similar to Sand Hollow Reservoir.
- Effects of LPP crossing across the Hurricane Cliffs active faults (e.g. fault lubrication, potential for increased seismic activity resulting from new weight distribution).
- Effects of proposed reservoirs on geologic stability of Hurricane Cliffs, taking into account recent earthquake in 1990 and fractures, fissures, minor faults, breccias and fault gouge in the lavas, limestones, and any other rock types underlying the proposed sites.
- Effect on ecosystem function resulting from the spread of non-native plant species in all affected areas and on undisturbed wildlands from the LPP's construction and operation.

H. Aesthetics and Noise

- The noise from building, operating and maintenance infrastructure on wildlife.
- Effects on natural resources from cleaning and maintenance of the LPP.
- Effects of pipeline's operation and maintenance, and resulting population growth, on the night sky of the two counties.
- Effects on the scenic landscapes of the Colorado Plateau and the disruption to the visitors' visual experience of remoteness from the imprint of the pipeline's electric infrastructure. In particular the effect to the Cockscomb, Three Pigs, Grand Staircase Escalante National Monument, and along the pipeline's highway corridors elsewhere.

I. Economic

According to the Washington County Water Conservation District's (WCWCD) *Capital Facilities Plan*, the cost of the proposed Pipeline project, including interest on bonds, will exceed \$1.7 billion dollars. Utah proposes to fund this project through property taxes, impact fees and water rates thus far without any financial grants from federal or state agencies. The DEIS should estimate the direct impact of funding the project on the residents of

Washington, and Kane Counties. The DEIS's analysis should also estimate the impact on residents and taxpayers if an economic downturn occurs and population growth slows. The cooperating agencies should consider whether state or federal funding would be available (to mitigate the burden of impact fees on project beneficiaries), and how the net benefits of the project may vary depending on funding source.⁷⁶

It is foreseeable that the pipeline, like other large government projects, may exceed its budget. The cooperating agencies can guard against that by ensuring that the costing methodology is fair, objective and comprehensive.

The WCWCD stated that impact fees, property taxes, water rate fees and surcharges are the funding sources that will cover the cost of the pipeline. In the DEIS, the cooperating agencies should provide a thorough assessment of funding sources and a “back up plan” in the case that impact fees do not cover most of the costs of construction. Furthermore, if water rates and surcharges increases on existing residents will be used to fund the project, the cooperating agencies should, in coordination with the independent sources, provide a detailed description of the ratemaking process to increase the fees needed to pay back the state for the LPP. The cooperating agencies’ role is to ensure there is reliable cost data in DEIS for the public to review.

The DEIS should analyze the following:

- A study on costs over the long-term risk of the possible infestation of quagga mussels into our regional pipeline from the LPP that is connected to many cities water infrastructure must be completed. The health hazard of putting chemicals in the water at every pump station along the pipeline must be analyzed. We are concerned that filters do not work as there is a very early life stage of mussels that is microscopic and can pass through current filters. In addition, consider the risk of infestation to the Virgin River system.
- The effect of higher impact fees and other fees on housing costs
- Estimated total project costs prorated to each Water Conservancy District
- Comparison of total project cost to total population in each Water Conservancy District service area to a conservation alternative.

⁷⁶ In *The Proposed Lake Powell Pipeline: A report on its Effect on Socioeconomic Resources (June 20, 2008)*, David Tufle (Associate Professor, School of Business, Southern Utah University) concluded that the economic benefit of the Pipeline for current residents would be marginal if outside money is not used to fund the Pipeline see 5 request for information at #

- Estimated debt burden per capita. While the WCWCD claims the pipeline can be paid by the population growth about fifteen years later. This assumes it will still have the right to divert water out of Lake Powell in fifteen years, which is questionable.
- Effects on pipeline's financing if annual growth rates do not reach the predicted rates. Not everyone needs a water hookup and most people buy an existing home. Therefore, the need for more water should not be tied to just population growth.
- Effects of increased WCWCD impact fees and surcharges on performance and nationwide competitiveness of the residential housing and commercial real estate market in the two counties. The DEIS should evaluate whether fees, surcharges, and taxes for the Pipeline could inflate the cost of housing and thereby cause declines in population growth especially among service providers (such as school teachers, police, fire fighters). The DEIS should evaluate whether subscribing Counties could lose their competitive advantage to other similar southwestern communities with lower taxes and fees. The DEIS should evaluate whether these negative results could be avoided by pursuing less expensive local water sources, recycling, and conservation.
- Effects of increased impact fees, surcharges and property taxes on the ability of the Counties and local governments to impose fees, surcharges, or taxes to pay for other services (e.g. roads, sewers, libraries, etc.) needed as a result of growth induced by the Pipeline.
- The effects on operation and maintenance costs resulting from reduced flow and the incremental expense of pumping water as the elevation of Lake Powell rises and falls. For example, what would the added cost be if Lake Powell is less than 50% full more than 50% of the Pipeline's projected lifetime? What added costs would occur when electricity for the pumps doubles, triples or quadruples in price by the time of construction in 2030?
- Fiscal effects if the LPP is unable to deliver the expected amount of water due to severe sustained drought, climate change, or conflicts among the Compact Basin states.
- Effects on cost of electricity to residents resulting from increased regional grid demand for LPP pumps.

- Effects of LPP-related cost of living increases in the two counties, e.g. increased cost of locally purchased and provided goods and services due to increased community wide tax burden.
- Effects of LPP-related increases in felony crimes in the two counties based on established crime trends in the Southwest associated with population growth.
- Effects of the LPP on the State's ability to maintain high bond ratings.
- Incremental cost-effectiveness of different water supply scenarios. Utah's preferred action alternative assumes that the full allotment of water will be delivered by the LPP and makes no reference to impacts that could be caused by a reduction of water delivery due to drought sharing. Since the cost-effectiveness of the Project (both revenues and associated costs) appears to be related to the amount of water supplied, the DEIS should evaluate the incremental cost-effectiveness of different supply scenarios.
- Effects of recent increases in the costs of fuel, steel, cement and other construction materials on the estimated cost of Pipeline construction. Utah's past estimates appear to omit many cost items, including fuel, transmission lines, rights-of-way, extending the pipe from Lone Rock Bay to the Colorado River mainstem and the new power upgrades that would be required at Glen Canyon Switch Yard because there is not currently enough power there to run the pumps. The proponents would have to arrange with WAPA to buy power and upgrade the switch yard. The DEIS should include all relevant cost items and should forecast to 2030-2040, allowing time for possible project delays.

J. Recreation

The EIS should analyze the following:

- Effects of project construction, operation, maintenance and change in land use on dispersed recreation in the two counties and within the sight of visitors along the proposed routes across the Arizona Strip, Grand Staircase-Escalante National Monument and elsewhere.
- Effect on the region's wildland character resulting from the pipeline's electrical infrastructure. The LPP would cross through spectacular landscapes and ecologically important wildlands, the Glen Canyon National Recreation Area, the Grand Staircase-Escalante National Monument, pass near proposed wilderness areas and two BLM

Areas of Critical Environmental Concern, and the Arizona Strip wildlands to reach St. George, Utah. Five proposed hydroelectric turbine stations and four pumping stations with power lines connecting to existing power grids, substations, access roads, regulating tanks and reservoirs, manholes, blow off valves, fencing, continued maintenance, repair and excavation would significantly degrade the region's wildland character. The Arizona Strip, after all, is known as the place "Where the West Stays Wild." and is managed by BLM to retain its remote landscape character.

Economic Impact Analysis in the DEIS using— Nonmarket Values

BOR has some guidance on assessing the economic value of protecting the scenic beauty of landscape for future generations and should be analyzed in the DEIS. The proposed Lake Powell Pipeline will destroy the scenic beauty of the pristine landscape by scarring the highway corridor all along the highways.

"The term nonmarket values refers to the benefits individuals attribute to experiences of the environment or uses of natural and cultural resources that do not involve market transactions and therefore lack prices. Nonmarket values capture a wide range of benefits (or costs), including those associated with the direct use of a resource (for example, the benefits received from hiking in a wilderness), as well as those associated with indirect uses of a resource (e.g., flood prevention provided by a wetland). These are collectively referred to as use values. Nonmarket values also include what are referred to as passive use values, which include the benefits provided by leaving a natural resource in a particular condition for future generations (bequest value) or the benefits provided by knowing that a resource exists in a particular condition (existence value). Because these values are not generally expressed in the marketplace, they are difficult to estimate but nonetheless BLM guidance calls for efforts to be made to identify and assess impacts to nonmarket values in the planning process (BLM Instruction Memorandum No. 2013-131, Guidance on Estimating Nonmarket Environmental Values, May 31, 2013)."

The scenic beauty of our public lands in Washington and Kane counties are world-renowned and drive our economies, providing thousands of jobs in hospitality and tourism. The visitors driving to different National Parks, Tourists are visiting the National Parks and Grand Staircase Escalante Monument and driving on these highways and would be directly adversely impacted by the building of the LPP and all of its infrastructure that would have to be built to support it, such as pump stations, new powerlines and roads. There is a transition happening in Utah to a future grounded in tourism and outdoor recreation, an industry that provided 110,000 direct jobs and \$3.9 billion in wages in the state of Utah in 2017. This needs to be considered in the DEIS. The Coalition feels this corridor has much more value to the State as scenic open space and should be protected from projects like the LPP that would degrade the scenic beauty of southern Utah.

“Research shows that conserving public lands like the Grand Staircase-Escalante National Monument helps to safeguard and highlight amenities that draw new residents, tourists, and businesses to surrounding communities. Western counties with protected public lands, such as national monuments, have been more successful at attracting fast-growing economic sectors and as a result grow more quickly, on average, than counties without protected public lands. In addition, protected natural amenities—such as the pristine scenery found at Grand Staircase Escalante—also help sustain property values and attract new investment.”⁷⁷

The St. George Area Sports Commission calculated that in 2017, 42 major athletic events brought more than 62,000 participants and over 116,000 out of town visitors to the area resulting in \$78 million in direct economic impact. Iron Man 70.3 brought in \$7 million in 2017. In 2018, the Huntsman World Senior Games had an estimated \$17 million economic impact. In 2017, the St. George Marathon brought in \$3.2 million from athletes and their entourages spending \$175 per day in our community.

K. Value of Preserving Ecosystems

“Many people value species and ecosystems intrinsically (e.g., for their complexity, diversity, spiritual significance, wildness, beauty, or wondrousness). As a result, species and ecosystems have subjective intrinsic value. How much subjective intrinsic value they have, in general or with respect to particular systems and species, depends upon the prevalence, strength, and stability of the valuing? Many people value some species and ecosystems (e.g., charismatic megafauna and old growth forests) more than others (e.g., infectious microorganisms and deserts). As a result, they possess more subjective intrinsic value.”⁷⁸

L. Air Quality

The DEIS should analyze the following:

- Effects of Pipeline project construction, operation and maintenance on regional haze. This includes the potential of effects from PM 2.5, PM 10, mercury, particulates, ozone and other regulated pollutants. The sources could include dust from construction activities, population growth-induced air pollution from increased number of automobiles, particulates resulting from new local power sources associated with the Pipeline, or increased use of existing power sources (e.g. St. George City’s diesel generators).

M. Energy Issues

The DEIS should provide a thorough analyses of electricity needs, greenhouse gas emissions, electricity costs, and the risk of climate change over a fifty-year time period described in detail below. In these analyses, the cooperating agencies should provide independent estimates

⁷⁷ See at: <https://headwaterseconomics.org/wp-content/uploads/Escalante.pdf>

⁷⁸ See at: <https://www.nature.com/scitable/knowledge/library/intrinsic-value-ecology-and-conservation-25815400/>

for energy *use* and energy *generation*; the analyses should not only estimate *net* energy demands. The cooperating agencies should analyze these elements independently of the proponents to eliminate any bias.

N. Energy Use

The DEIS must assess four elements of energy use:

- Total (annual) electricity use;
- Projected temporal patterns of electricity use and generation, including time of day and year;
- The anticipated source of the power for pumping stations; and
- The electricity use of water supply projects that will be developed throughout the Colorado River basin to mitigate the shortages caused by the proposed project.
- The impact of declining reservoir water levels on additional electricity needs for pumping water from Lake Powell into the proposed Pipeline. This analysis should include additional costs and greenhouse gas emissions.

The DEIS should provide an estimate of annual electricity demands throughout the fifty-year period of analysis. The lead and the cooperating agencies' analysis should estimate when the pipeline would operate at full capacity, and projected water deliveries and power demands in preceding years.

In addition, the DEIS should specify what time of day and year the pumping plants would require electricity, for several reasons. The timing of electricity use directly impacts the type of power (and fuel source) demanded by the Pipeline, the cost of electricity, and greenhouse gas emissions. The DEIS should also specify the source of electricity. If electricity will be acquired from electric utilities, the DEIS should note which utilities, and whether those utilities have capacity available on their systems to meet the new load. The DEIS should specify the anticipated source of new power – i.e. coal, gas, solar, or wind power. Finally, the DEIS should identify water supply projects that are being developed to mitigate shortages in the Lower Colorado River basin (such as brackish and ocean water desalination plants), identify electricity demands of these water supply projects, and in particular identify the portion of these projects and their electricity use that would be used to mitigate for shortages induced by the proposed Pipeline.

As described in the past reports, the proposed pipeline pumping system would consume more power than it would produce now that the Pumped Storage Project has been removed from the project scope. The DEIS should account for the estimated power to be consumed and power to be produced in terms of MW hours, gigawatt hours and the size of power plant (in MW and MW hours) that would be needed to run the pipeline's pumps. This power demand accounting should be identified separately from any hydropower that would be produced.

O. Greenhouse Gas Emissions

For each proposed alternative, the DEIS should assess annual and cumulative greenhouse gas emissions. Greenhouse gas emissions should be calculated based on the source of the electricity. For example, if the pipeline in any way contributes to the construction or expansion of a fossil fuel power plant – even if it is constructed by an independent electric utility – the GHG emissions estimate should reflect the emissions associated with a coal plant, *not* the average rate of emissions from the electric grid.

P. Operations Costs

The annual operations cost estimates provided in the DEIS should specify the cost of electricity for operation. The analysis should distinguish between the cost of power consumed by the Pipeline and revenues from power generated by hydropower facilities in the Pipeline. It should not be limited to *only* the net electricity costs. The hydroelectric power produced by the Pipeline will not meet the project’s entire pumping needs, and will likely have to be purchased from the electric utilities at peak price rates. The price of electricity purchased by the pipeline could fluctuate; in order to provide a thorough analysis, data on price rates should be provided. The DEIS also should identify a range of projected costs of electricity (in c/kWh) for the analysis. Specifically, in 2006, the industrial price of electricity was 4.21 c/kWh in Utah, 5.69 c/kWh in Arizona, and 8.03 c/kWh in Nevada.⁷⁹ They have gone up since then. The initial cost of electricity for the project should fall within this range, and should reflect the likely source of the power (e.g. a gas plant in Nevada or a coal plant in Utah). Many factors influence the price of electricity; the DEIS also should assess costs using a range of electricity price escalation rates. We recommend performing the analysis using annual escalation rates of 1%, 2%, and 4%.

VII. The Arizona Strip Resource Management Plan Amendment, ACEC

The DEIS must analyze how the construction, operation and maintenance of the LPP meets the goals of Arizona Strip’s RMP. The Arizona Strip, after all, is known as the place “Where the West Stays Wild” and is managed by BLM to retain its remote landscape character.

The DEIS should analyze the following:

- Effects of project construction, operation, and maintenance on terrestrial resources specifically located within the Kanab Creek Area of Critical Environmental Concern and elsewhere.
- Direct and indirect effects on local bird and wildlife populations and habitat as a result of habitat alteration and loss. Analysis of these effects should include the full

⁷⁹ Energy Information Administration, *State Electricity Profiles*, Table 8: Retail Sales, Revenue, and Average Retail Price by Sector, 1990 Through 2006.

geographic scope of the proposed project including all developable land proposed to directly or indirectly receive water from Flaming Gorge Reservoir. Habitat alteration and loss directly associated with Pipeline construction would be an insufficient geographic scope due to the Pipeline's cumulative effects.

- Effects of project construction, operation, and maintenance on the migration corridors for birds, the Kaibab deer herd and other wildlife species.
- Cumulative fragmentation effects on terrestrial resources, including birds and wildlife, due to road building, electric infrastructure and other development facilitated by the new supply of water to undeveloped areas of the Arizona Strip and rural or remote regions of the two counties.
- Effect of the LPP's pumping noise on birds and wildlife and their migration corridors and the recreational experience.
- Effects of seasonal construction periods to minimize potential impacts to migrating wildlife or nesting avifauna.
- Effects of perennially moist soil on LPP connecting structures at the Paria River and Kanab Creek stream bed crossings. The Quail Creek Pipeline has experienced extensive leaking problems at the Virgin River crossing. This has causing several environmentally destructive streambed excavations. The DEIS should identify a management protocol for leaks at river crossings and on the land as well as identify appropriate mitigation measures if damage occurs.
- Effects on water quality and aquatic ecosystems resulting from quagga mussels and the chemical or biological treatment of mussels, and the potential for spread of mussels to pristine or nearly pristine drainages into Grand Canyon National Park via the LPP route through the Paria River and Kanab Creek stream beds and elsewhere.
- Effects on aquatic ecosystems from pressure, cleaning, regulating reservoirs or accidental releases of water from the LPP at variable clean outs into drainages with perennial, ephemeral or intermittent natural waters.

The BLM has determined that an amendment to the Arizona Strip Field Office (ASFO) Record of Decision and Approved RMP (2008) in Coconino and Mohave Counties, Arizona (Project) would be required to correct conflicts identified between the management prescriptions for the Kanab Creek Area of Critical Environmental Concern (ACEC) and the designated Regional Utility Corridor No. 113-116, as well as to accommodate a portion of the proposed

Lake Powell Pipeline project (LPP project) that crosses the ACEC. Important natural values of the Kanab Creek ACEC and other fragile natural resources of the Arizona Strip may be adversely impacted from the building of the LPP and should be included in the analysis of the direct, the indirect and the cumulative effects in DEIS.

The DEIS should analyze the following:

A. Relevance and Importance

According to the 2008 Arizona Strip RMP, the 13,148-acre Kanab Creek ACEC's "Relevance and Importance" values consist of "significant, regionally important cultural resources vulnerable to vandalism and impacts":

The riparian area is a natural system that includes rare, endemic plant communities and suitable unoccupied habitat for endangered SW willow flycatcher. It has regional significance. The riparian area is fragile, irreplaceable, and unique and is vulnerable to adverse change. Cause for concern is dewatering, loss of habitat due to development, flooding, and alteration of the stream channel... Significant lands of regional importance containing wilderness characteristics with a high degree of naturalness, outstanding opportunities for solitude, and opportunities for primitive and unconfined recreation (BLM 2008:Appendix H, Table H.1, page H-2; emphasis added).

B. Wilderness Characteristics

Protecting wilderness characteristics on the Arizona Strip remains a major concern with conservationists. In years past, we have proposed a total of 1,106,910 acres in 43 units of Arizona Strip BLM-administered land for eventual designation as wilderness (AWC 2002, 2003, 2006; AWC et al. 2006). The BLM presented substantially less "Lands with Wilderness Characteristics" acreage in several iterations of land management planning ranging from 554,187 acres in the Draft RMP/EIS (BLM 2005:Table 2.10) to 287,853 acres in the recent final resource management plans. The Arizona Strip Field Office (ASFO) lands fell from 46,135 to 34,942 acres. Upper Kanab Creek (the current ACEC) was supported for wilderness in the 2005 Draft RMP, but not in the 2008 Final (BLM 2008: Table 2.09). Consequently, any additional reduction or impairment of wilderness characteristics and related values within the Arizona Strip FO is disconcerting to say the least.

C. Cultural Values

The Kanab Creek Watershed encompasses Kanab Creek, which flows south from the Pink Cliffs of the Paunsagunt Plateau to its confluence in Grand Canyon, and is the Paiute's traditional "entrance" into that vast canyon. Kanab Creek falls within the traditional territory of the Kaibab Band of the Paiute, who farmed along the creek and utilized the various available plant and animal resources. It was also an important north-south trade route and served as a refuge for Paiutes during European-American encroachment. The intermittent drainage is

composed of public lands administered by BLM’s Kanab and Arizona Strip Field Offices, the Dixie and Kaibab National Forests, as well as Grand Canyon National Park.

D. Wildlife Connectivity

Our concerns lie with, not only the impact of the Lake Powell pipeline on an existing ACEC, but also the adverse effects the pipeline imposes on wildlife habitat and connectivity. The AZFO comprises a crucial component of a significant wildlife linkage between Grand Canyon National Park and the adjacent Kaibab National Forest leading through Utah’s Grand Staircase-Escalante National Monument (GSENM) up to the Paunsagunt Plateau—the Bryce Canyon National Park region. The corridor’s connectivity function is well documented by Arizona and Utah state wildlife agencies (Carrel et al. 1999). This area serves as a critical wildlife migratory movement area between the Arizona’s Kaibab and Utah’s Paunsagunt Plateaus (Carrel et al. 1999).

By 1924, the federal government recognized the importance of lower elevation lands (including the Kanab Plateau) as winter range for mule deer (Morehouse 1996:57). Significant winter range exists on public lands managed by the Arizona Strip Field Office (Carrel et al. 1999: Figure 13, page 23). Summer mule deer habitat lies within Arizona’s North Kaibab Ranger District (Carrel et al. 1999: Figure 13, page 23) and Utah’s Dixie National Forest (Carrel et al. 1999: Figure 12, page 21).

Several studies indicate Kaibab mule deer actually migrate east, west, and north from summer range and return to winter range on the eastern or western sides of the Kaibab Plateau (Haywood et al 1987). Some researchers believe most of the winter range for the Kaibab herd lies in the west (Carrel et al. 1999). The Buckskin Mountains, eliminated from GSENM by President Trump, also provide “important” mule deer winter range on the northern edge of the Kaibab Plateau (Carrel et al. 1999:3).

In August 2004, conservation groups submitted proposals to the Arizona Strip Field Office (AZFO) for a “Kaibab-Paunsagunt Wildlife Corridor ACEC” including “crucial” deer habitat depicted in the 1990 RMP and adjacent to the North Kaibab National Forest (GCWC and AWC. 2004:9-15). The purpose of the proposed ACEC was to protect wildlife connectivity from the Kaibab Plateau (Grand Canyon National Wildlife Preserve) to GSENM and Paunsagunt Plateau (Dixie National Forest), and to protect important wildlife and rare plant habitat.

References Cited:

Bennett, G. 2004. Integrating Biodiversity Conservation and Sustainable Use: Lessons Learned From Ecological Networks. IUCN, Gland, Switzerland, and Cambridge, UK. 55pp. Available at: <http://data.iucn.org/dbtwwpd/edocs/2004-002.pdf>

Bureau of Land Management [BLM]. 2006. Record of Decision and Approved Dillon Resource Management Plan. February 2006.

Bureau of Land Management [BLM]. 2008. Record of Decision Approved Arizona Strip Field Office Resource Management Plan. February 2008.
<https://archive.org/details/arizonastripfiel00unit>.

Bureau of Land Management [BLM]. 2012. Lower Sonoran Record of Decision and Approved Resource Management Plan. [https://eplanning.blm.gov/epl-front-office/projects/lup/11856/40127/42156/01-LSDA ROD-ARMP FINAL 2012-09-19 web-with-Links sans-map-pages.pdf](https://eplanning.blm.gov/epl-front-office/projects/lup/11856/40127/42156/01-LSDA%20ROD-ARMP%20FINAL%202012-09-19%20web-with-Links%20sans-map-pages.pdf)

Bureau of Land Management [BLM] 2015. Draft Resource Management Plans: Beaver Dam Wash National Conservation Area, Red cliffs National Conservation Area; and Draft Amendment to the St. George Field Office Resource Management Plan; and Draft Environmental Impact Statement. Chapter 4—Environmental Consequences.
[http://www.blm.gov/style/medialib/blm/ut/st_george_fo/planning/rmp-eis 5-8.Par.98394.File.dat/5-Chapter4-Environmental%20Consequences.pdf](http://www.blm.gov/style/medialib/blm/ut/st_george_fo/planning/rmp-eis%205-8.Par.98394.File.dat/5-Chapter4-Environmental%20Consequences.pdf)

BLM 2018. Notice of Intent to Prepare Resource Management Plans for the Grand Staircase-Escalante National Monument-Grand Staircase, Kaiparowits, and Escalante Canyon Units and Federal Lands Previously Included in the Monument That Are Now Excluded From the Boundaries and Associated Environmental Impact, Utah. 01/16/2018.
<https://www.federalregister.gov/documents/2018/01/16/2018-00518/notice-of-intent-to-prepare-resource-management-plans-for-the-grand-staircase-escalante-national>. Accessed January 2, 2020.

Carrel, William K., Richard A. Ockenfels, and Raymond E. Schweinsburg. 1999. An Evaluation of Annual Migration Patterns of the Paunsaugunt Mule Deer Herd Between Utah and Arizona. Arizona Game and Fish Department Technical Report 29. Phoenix. 44 pages.

Council on Climate Preparedness and Resilience [Council]. 2014. Priority Agenda: Enhancing the Climate Resilience of America's Natural Resources.
https://obamawhitehouse.archives.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf. Accessed January 2, 2020.

Department of Interior [DOI]. 2018. Secretarial Order 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors.
https://www.doi.gov/sites/doi.gov/files/uploads/so_3362_migration.pdf

Grand Canyon Wildlands Council (GCWC) and Arizona Wilderness Coalition (AWC). 2014. Arizona Strip Resource Conservation Area: A Proposal. A report submitted to the Bureau of Land Management Arizona Strip Field Office, August 23, 2004. Document on File at Arizona Wild, Flagstaff, AZ. –

Haywood, D.D., R.L. Brown, R.H. Smith and C.Y. McCulloch. 1987. Migration Patterns and Habitat Utilization by Kaibab Mule Deer. Arizona Game and Fish Department Federal Aid in Wildlife Restoration Project W-78-R Report, Phoenix. 29 pages.

Heller, N. E. and E. S. Zavaleta. 2009. Biodiversity Management in the Face of Climate Change: A Review of 22 Years of Recommendations. *Biological Conservation* 142: 14-32.

Mawdsley, J. R., R. O'Malley, and D.S. Ojima. 2009. A Review of Climate Change Adaptation Strategies for Wildlife Management and Biodiversity Conservation. *Conservation Biology* 23(5):1080-1089. Available at:
[http://nctc.fws.gov/courses/climatechange/climateacademy/documents/Mawdsley et al 2009%20\(2\).pdf](http://nctc.fws.gov/courses/climatechange/climateacademy/documents/Mawdsley%20et%20al%2009%20(2).pdf)

Morehouse, B.J. 1996. *A Place Called Grand Canyon: Contested Geographies*. Tucson, AZ: University of Arizona Press. 202 pages.

Vincent, Carol Hardy, Laura A. Hansen, and Carla N. Argueta. 2017. Federal Land Ownership: Overview and Data. Congressional Research Service Report for Congress. <https://fas.org/sgp/crs/misc/R42346.pdf> (Accessed 11-22-2017).

Wildlands Network and Grand Canyon Wildlands Council [WN and GCWC]. 2018. Comments on the NOI to Prepare a Resource Management Plan for the Grand Staircase-Escalante National Monument—Grand Staircase, Kaiparowits, and Escalante Units, sent to [BLM UT CCD monuments@blm.gov](mailto:BLM_UT_CCD_monuments@blm.gov), April 4, 2018.

E. The Federal Wildlife Connectivity Requirements

Federal lands comprise more than one quarter of land in the U.S. (Vincent et al. 2017) and it is the federal agencies' responsibility to manage these lands in a manner consistent with law and policy. Management direction is provided by landmark federal legislation including the National Environmental Policy Act (NEPA), Federal Land Policy and Management Act (FLPMA), National Forest Management Act (NFMA), the Endangered Species Act (ESA), and other national legislation and relevant regulation, policy and guidelines available on-line. Presidential proclamations and executive orders provide additional national guidance and agency priorities.

For example, the first goal of the President's *National Fish, Wildlife, and Plants Climate Adaptation Strategy* is to *build or maintain ecologically connected network of terrestrial, coastal, and marine conservation areas* that are likely to be resilient to climate change and support a broad range of fish, wildlife, and plants under changing conditions (Council 2014:19-20). Major reviews of climate change conservation management options generally identify increased habitat conservation and establishing or restoring habitat connectivity as the top, if not the top, options to pursue (Mawdsley et al. 2009, Heller and Zavaleta 2009). Identifying such priority areas also benefits wildfire management, mitigation investments, restoration efforts, and water and air quality.

F. The DEIS must reflect a Comprehensive Strategy

Federal agencies have the opportunity, in many cases the responsibility, to cooperate and coordinate interagency wildlife connectivity management. Any comprehensive strategy for conserving biological diversity requires maintaining habitat across a variety of federal and state-managed lands, as well as cooperating private landowners. To put connectivity into a broader context, ecological networks result from the interaction of species and ecosystems at a large-landscape scale. Functional ecological networks that conserve biodiversity and provide for sustainable use of natural resources should be the goal of conservation and land management efforts. The ecological network concept embodies several key elements: (1) conservation core areas [e.g. Grand Canyon-Parashant, Grand Staircase-Escalante and Vermilion Cliffs National Monuments, and Grand Canyon, Bryce Canyon, Capitol Reef, and Zion National Parks]; (2) corridors and linkages; (3) buffer zones and sustainable use of non-conservation lands; and (4) the inclusion of human cultural and socioeconomic factors along with the consideration of wildlife needs, such as rural communities that coexist with wildlife. An ecological network is a coherent system of natural or semi-natural landscape elements configured and managed with the objective of maintaining or restoring ecological function as a means of conserving biodiversity while also providing appropriate opportunities for the sustainable use of natural resources (Bennett 2004).

G. BLM Wildlife Connectivity Responsibilities

The BLM has broad authority to administratively designate wildlife corridors (similar to the Centennial Mountains ACEC, BLM 2006; Trappers Point [Path of Pronghorn] BLM 2008; Sonoran Desert designations; BLM 2012) for mitigation of existing and potential wildlife habitat fragmentation. Under the Federal Land Policy and Management Act (FLPMA), the BLM is charged with identifying, inventorying, and protecting important natural resources, such as wildlife corridors, on the public lands. FLPMA requires that the BLM identify and inventory the public lands for resources and important values, giving priority to designation of areas of critical environmental concern, and manage the lands pursuant to resource management plans (RMPs) that are based on this inventory. 43 U.S.C. §§ 1711(a), 1712. FLPMA directs the BLM to manage the public lands in a manner “that will **protect** the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values.” 43 U.S.C. § 1701(a)(8). (emphasis added). Furthermore, the BLM is expected to preserve “certain lands in their natural condition; that will provide food and habitat for fish and wildlife.” *Id.*

H. The decisions made in the DEIS must use the Best Available Science

The Department of Interior (DOI) is clearly required to implement a policy of using the best available scientific information (BASI) for planning documentation, a principle foundation for establishing wildlife corridors. The DOI Policy for the Integrity of Scientific and Scholarly Activities posits as its central tenet at §3.4 Policy “The Department... will not tolerate loss of integrity in the performance of scientific and scholarly activities or in the application of science and scholarship indecision making...” This policy further requires that scientific findings and

conclusions be made subject to public vetting: § 3.4.C “*Document the scientific and scholarly findings considered in decision making and ensure public access to that information and supporting data through established Departmental and Bureau procedures....*”

In another DOI example of applying the BASI—the National Landscape and Conservation System (NLCS) was legislatively established by the Omnibus Public Land Management Act of 2009 (Public Law 111-11) *in order to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations.* The BLM policy manual describes how “*the BLM will use the best available science in managing the NLCS*” and how “*science and the scientific process will inform and guide management decisions concerning NLCS units*” (BLM Manual §6100(1.6)(A)(9) and (1.6)(F)(1)). Providing a scientific foundation for decision-making is also a goal identified in the NLCS 15-Year Strategy (Goal 1C).

I. Secretarial Order 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors (DOI 2018).

Early in 2018, the Secretary of Interior Zinke issued an order to BLM, the Fish and Wildlife Service, and the National Park Service to “to enhance and improve the quality of big-game winter range and migration corridor habitat on Federal lands under the management jurisdiction of [the DOI]” within western states including Utah. The order further directed management benefiting wildlife “such as Rocky Mountain Elk (elk), Mule Deer (deer), Pronghorn Antelope (pronghorn), and host of species...[t]hrough scientific endeavors and land management actions.”

J. In the DEIS the impact of the LPP cutting through a Wildlife Corridor that Links the Kaibab and Paunsagunt Plateaus must be analyzed.

In our comments to the GSENM planning staff regarding the notice of intent to prepare a resource management plan for the Monument (BLM 2018d), we outlined the agency’s wildlife connectivity responsibilities as presented above (Wildlands Network and Grand Canyon Wildlands Council 2018). We also suggested goals and objectives specific to wildlife connectivity:

- Designate wildlife corridors so they contain sufficient ecologically effective habitat to facilitate wildlife movement for daily, seasonal or long-term needs in a relatively safe manner (modified from BLM 2012:2-55).
- Maintain functioning wildlife habitats and migration and dispersal corridors that allow free movement and use of habitats (BLM 2008:2-45,47).
- Manage area to conserve crucial habitats and protect migration and movement routes for mule deer, other big game, and other wildlife, such as carnivores (modified from BLM 2015d:881; Section 4-49.2).

These recommendations are consistent with the management emphasis presented in the

2008 Arizona Strip Field Office Resource Management Plan for priority species and habitats in conflict resolution (BLM 2008, MA-WF-01, page 2-28):

- All game mammals including: mule deer, pronghorn antelope, desert bighorn sheep, mountain lion, Kaibab squirrel, and desert cottontail rabbit; and carnivores including kit fox, gray fox, and long-tailed weasels” (BLM 2008, MA-WF-01, page 2-29).
- Priority carnivore species will include mountain lion (BLM 2008, MA-WF-41, page 2-36).
- Activities that adversely affect breeding, feeding, or sheltering activities of priority wildlife species may be modified, mitigated, or otherwise restricted to minimize disturbance to the species (BLM 2008, MA-WF-03, page 2-29).

Recommendations are also consistent with the plan’s Desired Future Conditions:

- Habitat connectivity and wildlife movement between ecological zones will be maintained (BLM 2008, DFC-WF-06, page 2-28).
- The natural biological diversity of fish, wildlife, and plant species will be maintained or, where necessary and feasible, restored throughout the Arizona Strip FO. Habitats will be managed on an ecosystem basis, ensuring that all parts of the ecosystem and natural processes are functional (BLM 2008, DFC-WF-11, page 2-28).
- Predators will be recognized as an important component of plant and animal communities (BLM 2008, DFC-WF-08, page 2-28).
- Mule deer habitat will provide the necessary forage, water, and shelter components for healthy, self-sustaining populations within the range of natural variability (BLM 2008, DFC-WF-12, page 2-31).
- Pronghorn habitat will provide the necessary forage, water, and shelter components for healthy, self-sustaining populations within the range of natural variability (BLM 2008, DFC-WF-120, page 2-32).

Our management and special designation recommendations presented above are consistent with, and in fact reinforce, federal wildlife responsibilities, including the direction specified by Secretarial Order 3362. We urge BLM (Arizona Strip and Kanab Field Offices (ASPO), and GSENM) to carefully consider these sensitive wildlife areas in amending the RMP to allow for the pipeline and to explicitly identify, both spatially on maps and described in written form through the planning process (including any Resource Plan amendments for the ASPO and Kanab Creek ACEC).

VIII. Incomplete Studies

The Coalition has been concerned about the project for ten years now. The proponents make statements in studies without any evidence of the facts to support their claims; therefore their studies are incomplete. It has been a decade or more since the data was collected for some

of the Federal Energy Regulatory Commission (FERC) studies. This affects their reliability and the credibility for use in the DEIS. If a FERC study is used for this DEIS the lead and cooperating agencies must verify that the information is current, accurate and unbiased.

The lead and cooperating agencies in the DEIS must also include the findings and recommendations from the current Reclamation studies using: the current science on climate change, the Utah state audit on water need projections, and the recent Division of Water Resources reports on the higher conservation potential and consider all water supplies in Kane and Washington Counties that could be treated. In an effort to show lower water supplies the Washington County Water Conservancy District only considers available grade culinary supply in their study of the need for the LPP.

The Coalition is concerned that there are gaps in the current studies that will interfere with preparation of the DEIS. The cooperating agencies should use facts gathered from independent sources for the DEIS. The information provided in the FERC studies in some cases completely left out critical data. Without complete information decisions based on the DEIS will be fundamentally flawed.

For example, the LPP project's analyses, projections, and estimates have changed over time and continue to evolve even now. The need for water is lower, and the LPP project water may not be needed by or much after 2030—certainly not by 2020, as previously asserted by Utah in the study reports. There is very little clarity, much less certainty, in previous claims about: the need, the project cost, water availability, water supply, and desirability of conservation measures. It is of utmost concern that current data in UDWR's studies be updated and made available to those who want a detailed and thorough understanding of this project, so that informed decisions can be made in the DEIS.

These significant issues need to be analyzed in the DEIS include:

1. A reasonable conservation alternative we detail in our comments, similar to the *Local Waters Alternative* that addresses a wider range of water supply sources.
2. A new climate change study must be analyzed in the DEIS that considers the direct, the indirect and the cumulative impacts of various climate projections on the annual flow of the river at Lees Ferry. The direct, the indirect and the cumulative effects to humans and ecosystems would be very different depending on the flow.
3. Since the purpose of the DEIS is to approve a BOR service contract for Utah to buy water for the LPP out of Flaming Gorge Reservoir the geographic scope for the DEIS must be from the Flaming Gorge Reservoir to Sand Hollow Reservoir, which includes the direct, the indirect and cumulative effects on the Green and Colorado Rivers.
4. Analyze as water resources in the CRSP's reservoir system declines who has seniority to use the water that remains in the Flaming Gorge and Lake Powell reservoirs?

5. Analyze the risk of economic disruption that UBWR can't divert any water out of Lake Powell Reservoir and therefore the state doesn't have water to sell to pay for the debt.
6. Include the two BOR service contracts for Utah's Ultimate Phase CUP water rights for 158,800 AFY out of Flaming Gorge reservoir in the DEIS because they are in fact a connected federal action.
7. Disclose where Utah's high-water rights in the Green River tributaries of 158,800 AFY it wants to exchange with the BOR for the same amount of water out of Flaming Gorge Reservoir for the Ultimate Phase CUP water right, (which includes water for the LPP to complete the proposed action) is located Utah just claiming it has the water supplies to trade for these contracts is not sufficient.
8. An analysis of how the proposal to divert water from Lake Powell is in accordance with the Law of the River to effectively operate the project over the term of license. According to the Colorado River Compact, Utah's Upper Basin water rights cannot be used in the Lower Basin, where the project is located. Also, the goal of the Colorado River Storage Project is the Upper Basin reservoirs are to assure water for the Lower Basin. Also, what federal legislation will have to be passed to allow for this to occur?
9. An analysis of Utah water laws and what laws would have to be changed in order to leave water in the Green and Colorado rivers for 400 miles for an instream flow for the benefit of the endangered fishes from Flaming Gorge reservoir to Lake Powell.
10. Determine the river's safe yield for the long-term permanent water project, by using a Hydrological Determination that uses less than the historical 100 year average of 15 MAFY at Lee Ferry. This could determine if Utah has a sufficient water supply for the Lake Powell Pipeline. See information on a Hydrological Determination for the Jicarilla Navajo reservoir service contract.⁸⁰
11. An analysis of the sufficiency of the concept and plan for providing water for the LPP if senior water rights use all of Utah's recalculated Colorado River allocation that considers the high probability of long-term Colorado River declining flows.
12. An analysis of the probability that the LPP's water right is highly secure for a permanent water project.

IX. Conclusion

Many changes have occurred since the LPP Project was conceived. The idea for the LPP was first proposed in the late 1990s. Washington County's 2060 population was projected to be 670,000, the LPP's costs were estimated to be \$187 M, the benefits and costs of conservation

⁸⁰ see at:

<http://www.ose.state.nm.us/Legal/settlements/NNWRS/Initial%20Disclosures/Settlement%20Documents/Summary%20of%20the%202007%20Hydrologic%20Determination%20re%20Navajo%20Settlement%20110507.pdf>

were relatively unknown, and the risk of declining stream flows in the Colorado River were also relatively unknown. In 2006, when the Lake Powell Pipeline Act was passed by the Utah legislature, the cost was only estimated to be \$500 million.

Since then things have substantially changed: over-allocation of the state's water is becoming known, the 2060 population is projected to be about half, the LPP project costs are projected to be significantly higher (counting, operations, maintenance, and debt service), the benefits and costs of conservation are much better known, the risk of declining water supplies from the Colorado River is much clearer, and the over allocation of Colorado River is being recognized. We believe the prudent course of action is to implement less costly, less risky, incremental alternative of improved local water management first. This would position the counties and the state much better economically and environmentally.

The intent of NEPA by Congress was to protect the environment for future generations.

The National Environmental Policy Act (NEPA) of 1969, as amended, states:

Sec. 101 [42 USC § 4331].state:

*“(a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.”*⁸¹

The Coalition is asking that the lead and cooperating agencies be objective and unbiased in gathering all the facts for consideration independent of the proponent's information. Also, the lead and cooperating agencies must require that the proponents to provide clear and concise evidence that they have the senior water rights necessary for a permanent water project.

The DEIS must be prepared with a sufficient level of analysis so that the decision makers and the public are able to make a decision on the project's environmental consequences. For ten years the proponents have ignored analyzing all the water sources available and cheaper alternatives that are less damaging to environment as we detailed in our comments. We are asking for the lead and cooperating agencies to do an unbiased analysis of the project using

⁸¹ The National Environmental Policy Act of 1969, as amended. See at: https://www.whitehouse.gov/sites/whitehouse.gov/files/ceq/NEPA_full_text.pdf

scientific information and not have it be a political decision as decisions about allocating the Colorado River have been about for all these years. The environmental consequences of the project would be very different if you use less water for the annual flow of the Colorado River. NEPA obligate federal agencies to provide high quality information including accurate scientific analyses that have scientific integrity. See

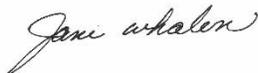
40 CFR 1500.1 (b) state.

“(b) NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.”⁸²

Authors Kuhn and Fleck explain in their book how the development boosters during to creation of 1992 the Compact selectively chose the information needed to support their dreams, ignoring inconvenient science that suggested a more cautious approach.⁸³ This approach to decision making continues even today with this proposed action. The continuation of over-allocating the Colorado River by the BOR without regard to the 40 million people, businesses and ecosystems that rely on the Colorado River that are using every drop now must be considered in this DEIS.

We thank you for allowing the opportunity to comment on this project and appreciate your consideration of including our scoping comments into the analysis of the DEIS.

Respectfully,



Jane Whalen, Board
Conserve Southwest Utah
321 N Mall Drive, Ste.B202,
St George, Utah 84790
435-619-2144
email@conservewu.org

Douglas W. Wolf
Senior Attorney
Center for Biological Diversity

⁸² See at: <https://www.law.cornell.edu/cfr/text/40/1500.1>

⁸³ Kuhn and Fleck, *Science be Dammed, How ignoring Inconvenient Science Drained the Colorado River*, pp.4-6.

1411 K St. NW, Suite 1300
Washington, D.C. 20005
202-510-5604
Dwolf@biologicaldiversity.org



Kelly Burke
Wild Arizona
PO Box 40340
Tucson, Arizona, 85117
928-606-7870
kelly@wildarizona.org

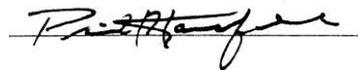


Kim Crumbo
The Rewilding Institute
3275 Taylor Avenue
Ogden, UT 84403

928-606-5850
kcrumbo43@icloud.com

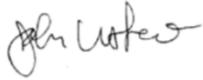


Eric Balken
Glen Canyon Institute
429 E. 100 S.
Salt Lake City, Utah 84111
801-383-4450
eric@glencanyon.org



Phil Hanceford
The Wilderness Society
1660 Wynkoop St., Ste 850
Denver, Colorado 80202
303-650-5818

phil_hanceford@tws.org



John Weisheit, Co-founder



Sarah Stock, Program Director
Living Rivers Colorado Riverkeeper
PO Box 466,
Moab, Utah 84532
435-259-1063
John@livingrivers.org
Sarah.livingrivers@gmail.com



Sarah Bauman
Executive Director
Sarah Bauman, Executive Director
Grand Staircase Escalante Partners
PO Box 53, 310 S 100 E #7
Kanab, Utah 84741
435-644-2724
Sarah@gsenm.org

Zach Frankel Director
Utah Rivers Council
1055 East 2100 South, Suite 201
Salt Lake City, Utah 84106
(801) 486-4776
zach@utahrivers.org

Kyle Roerink
Executive Director
Great Basin Water Network
P.O. Box 75
Baker, Nevada 89311
kyle4gbwn@gmail.com
702-324-9662



Sandy Bahr, Director
Grand Canyon Chapter of Sierra Club
514 W. Roosevelt St.
Phoenix, Arizona 85003
602-253-85003
Sandy.bahr@sierraclub.org



Carly Ferro,
Utah Chapter of Sierra Club
423 West 800 South, Ste A103
Salt Lake City, Utah 84161
801.467.9294 x102
Carly.Ferro@sierraclub.org

John Bellmon, President
Utah Audubon Council
2764 East 200 North
Layton, UT 84040
801-814-7544
bellmon@comcast.net

EXHIBIT

Grand Staircase Escalante Partner's include their comments on the LPP's 404 permit in the [scoping comments](#) for consideration.

