

## Attachment 4

### PLP Lake Powell Pipeline Project Responses to Participant Comments on PLP and Draft Study Reports

#### **General Comments:**

##### **FERC Comment 1:**

*The Integrated Licensing Process regulations at section 5.16(b)(3) require that the preliminary licensing proposal (PLP) include an environmental analysis, by resource area, of the continuing and incremental effects of the proposed project, if any, and the results of studies conducted under the approved study plan. In general, your PLP describes the proposed project facilities and operations and provides an analysis of the anticipated effects of construction and operation of the proposed project with your proposed environmental measures. However, in some instances, the description and analysis of the proposed measures lack sufficient detail for our staff to conduct an environmental analysis. In this appendix, we provide comments on your study reports and note the areas of the PLP where inconsistencies should be resolved and where specific information must be added to the environmental analysis before you submit your license application.*

##### **UDWRe Response:**

**Exhibit E in the Utah Board of Water Resources (UBWR) License Application has been revised and updated from the PLP filed with FERC in December 2015. The descriptions and analyses of proposed measures have been provided in more detail in the final study reports, and specific information requested by FERC has been added to the environmental analysis in the License Application.**

##### **Reclamation Comment 2:**

*(Page 5 – Comment Letter – DOI to FERC dated 12-28-07)(updated)*

*The proposed project would use the Utah Board of Water Resources' water rights stored in Flaming Gorge Reservoir by Reclamation that has been historically released down the Green River to Lake Powell under the guidelines of the 2006 Flaming Gorge ROD. Under the proposed project this water would be diverted at Lake Powell and carried through a 139-mile pipeline, with power generating facilities located in Washington County, Utah. The proposed action does not modify the releases of Flaming Gorge water under the 2006 ROD.*

*The entity that is issued a preliminary permit would be required to enter into an agreement with Reclamation to allow for access to Reclamation lands and/or facilities to conduct site investigations in connection with Project permit and licensing activities. Such agreement would include, but not be limited to, provision for (1) approval by the responsible Reclamation manager; (2) restoration of the premises; (3) Reclamation approval and supervision of any onsite work; (4) agreement to perform all activities without cost to the United States; (5) agreement to indemnify and hold harmless the United States from any liability arising out of their activities; and (6) advance funding to Reclamation for its costs incurred in performing studies, reviews and oversight, including an amount for administrative overhead.*

*In order to generate power under a FERC license with Flaming Gorge water diverted from Lake Powell (under the UBWR water right), it would be necessary for the licensee to enter into a water service contract with Reclamation. If a license and contract is issued, that entity would also need to obtain a separate license agreement with Reclamation for the use of Reclamation lands for the proposed intake and pumping plant. As a condition of such license agreement, Reclamation would need to approve designs, specifications, construction, operation procedures, and any modifications to existing structures to the extent necessary to ensure the structural and operational integrity of Reclamation facilities. Studies associated with preparing the license application should consider potential impacts to Reclamation facilities starting at Lake Powell.*

*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.*

**UDWRe Response:**

**UBWR intends to comply with the requirements for conducting investigations on Reclamation lands and facilities or for contracting with Reclamation for those services. UBWR also intends to enter into a water service contract with Reclamation as well as a separate license agreement for use of Reclamation lands for the proposed intake and pumping plant. UBWR does not intend to alter releases from Flaming Gorge Reservoir in order to provide the water to be delivered through the Lake Powell Pipeline consistent with discussions with Reclamation staff over the years. Therefore UBWR believes there will be no potential impact from Flaming Gorge Reservoir to Lake Powell resulting from the Lake Powell Pipeline Project.**

**NPS Comment 1:**

*The National Park Service has completed its review of the Environmental Analysis accompanying the Preliminary Licensing Proposal for the Lake Powell Pipeline, FERC Project No. P-12966. We appreciate having the opportunity to provide you with our thoughts and comments about how this project may affect units of the National Park System. Please see our attached comments located in Appendix A.*

*Primary issues of concern include:*

- *Adequacy of water modeling regarding Glen Canyon National Recreation Area, Lake Powell levels and associated resource effects*
- *Insufficient information provided regarding Aquatic Invasive Species (AIS) due to missing appendix*
- *Efficacy of the AIS treatment protocols and the possibility of AIS introduction into other water bodies*
- *Adequacy of noise and night sky analysis*
- *Potential effects to Zion from Lake Powell Pipeline-related growth*
- *Adequacy of information regarding effects to cultural resources, and impacts to the Old Spanish Trail*

**UDWRe Response:**

**The National Park Service (NPS) specific comments on the PLP are responded to for each specific comment.**

**National parks will not be directly impacted from construction or operation noise from the project. GSENM and Glen Canyon National Recreation Area will be impacted by short term noise.**

**Refer to the response to USFWS Comment 1 in the General Comments section regarding growth.**

## **NPS Comment 2:**

### **Aquatic Invasive Species:**

*The National Park Service (NPS) requests the completed Appendix C "Preliminary Draft Aquatic Invasive Species Control and Monitoring Plan" for our review when it becomes available. Until that document is made available for our review, it is difficult for us to make any substantive review and comments regarding aquatic invasive species control and monitoring, as part of this project.*

*The NPS has concerns about the transfer of water from a known quagga mussel (Dreissena spp.) infested water body to another water body unless sufficient mitigation measures are in place to prevent the transfer of quagga or zebra mussel veligers or adults with the water. In addition to the potential transfer of quagga mussels, other Aquatic Invasive Species (AIS) could be transported through the pipeline with environmental consequences, including other nonnative invertebrates, and nonnative fish and plant species. Further review of the proposed project and prevention measures are necessary to fully evaluate the risks to natural resources and infrastructure at the terminus of the pipeline and downstream.*

*Based on the information that has been provided at this time, with respect to the use of an Environmental Protection Agency (EPA)-approved biologically-active molluscicide (e.g. Zequanox CS, EPA Reg. No. 84059-15, active ingredient: 50% killed *Pseudomonas fluorescens* strain C1145A cells and spent fermentation media).*

- *NPS will request the submittal of a pesticide use proposal (PUP) to the GLCA Park Integrated Pest Management (IPM) Coordinator, and authorization by the NPS, prior to application of that or any other pesticides applied on all NPS managed or regulated lands or waters by any contractors, permittees, or licensees (NPS Management Policies (2006) Section 4.4.5).*
- *This NPS approval will be required on an annual (calendar year) basis, and end-of-year reporting of the amount of pesticide applied and area or volume of water to which it was applied will also be required. As part of the requirements for NPS approval of any pesticides used in water, when that water may be discharged into another water body, Clean Water Act National Pollution discharge elimination system regulations for pesticides will need to be followed, and in Utah these regulations are imposed by the Utah Department of Environmental Quality.*
- *The NPS will require documentation that the entity applying pesticides is in compliance with Utah Pollutant Discharge Elimination (UPDES) Permits.*
- *In addition, documentation, results, and any mitigation measures required, based on consultation with the U.S. Fish and Wildlife Service with respect to any potential impacts to threatened or endangered species as a result of any pesticide use, will also be required for NPS approval of any proposed pesticide use. The GLCA Park IPM Coordinator may be contacted for additional information on these requirements.*

## **UDWRe Response:**

The Draft Aquatic Invasive Species Control and Monitoring Plan recommends a combination of molluscicide application at the entrance to the intake tunnels from Lake Powell and self-cleaning microscreen filtration at 25 microns immediately following the intake pumps to remove all life stages of *Dreissena* spp. (quagga mussel), non-native invertebrates, non-native fish species, and non-native plant species from the Lake Powell water before it leaves the Water Intake Pump Station. These recommended measures combine a selective, biological control molluscicide (Zequanox) with a physical microscreen filtration system to remove all potential aquatic invasive species from the Lake Powell water diverted into the LPP project. If more effective and reliable aquatic invasive species control measures are available when the LPP Project is designed prior to construction, then the best available technology will be designed and implemented, as long as such best available technology does not have adverse effects on environmental resources. If the aquatic invasive species control involves the use of a molluscicide, then UDWR will prepare and submit a pesticide use proposal (PUP) to the GLCA Park IPM Coordinator for authorization by NPS. UDWR will prepare an annual report on molluscicide use and water volume treated, along with complying with AZPDES and UPDES permit regulations for any discharges of molluscicide treated water. UDWR will document the results of molluscicide use and consult with the US Fish and Wildlife Service (USFWS) on potential impacts on listed species resulting from molluscicide use, providing such documentation and consultation to NPS for approval.

**NPS Comment 3:**

**Aquatic Invasive Species:**

*The UDWR should be consulted on the current status of invasive mussels in Sand Hollow Reservoir, and information in this section should be updated/corrected to indicate that the reservoir is not known to be currently infested with invasive dreissena mussels. In section 5.3.6.1.6.4 Sand Hollow Reservoir, the statement that quagga mussels were detected there in 2010 is correct, however subsequent testing did not find any dreissena mussels there and the status of the reservoir is no longer considered positive for invasive mussels. After 2010, Utah Division of Wildlife Resources (UDWR) sampling did not detect dreissena mussels in the reservoir through 2014, and 2015 sampling results are pending. Additionally, the information in Section 5.3.7.2.2.5 Interbasin Transfer of Lake Powell Pipeline (LPP) Water should also be corrected with respect to Sand Hollow Reservoir and infestations of invasive mussels or other species transported by recreational boats, as the UDWR requires inspections and decontamination of watercraft used on that waterbody in order to prevent such infestations. The UDWR should be consulted and the information should be corrected/updated to indicate that prevention of the spread of aquatic invasive species is being conducted throughout Utah by the UDWR.*

**UDWR Response:**

Section 5.3.6.1.6.4 has been updated to explain that quagga mussels have not been found in Sand Hollow Reservoir during Utah Division of Wildlife Resources (UDWR) sampling in 2014 and 2015. Section 5.3.7.2.2.5 has been corrected with respect to Sand Hollow Reservoir and infestations of aquatic invasive species transported by recreational boats, which UDWR requires inspections and decontamination of watercraft used on Sand Hollow Reservoir to prevent infestations.

**NPS Comment 4:**



**Water Resources:**

*The report provides substantial background material on each resource, however, substantive discussion as to the basis for the conclusions cumulative and effects are limited. For example:*

- *Section 5.2 Cumulative Effects is confusing. Lists resources that could be affected by each action without reference to subsequent discussion(s) in the report that address the issues raised here. The NPS requests additional information on the cumulative effects of the proposed project(s). For each resource identified in this section, please reference where in the document the cumulative effects are discussed.*
- *Geology and Soil Resources: Page 5-81: The proposed action alternative (as well as all the other alternatives) "would have no measurable cumulative effects from construction (short-term) or operation and maintenance (long-term)." The NPS request further analysis on the development and import 1.13 million cubic yards of material, the excavation of 2.23 million cubic yards of bedrock, the production of 2.8 million cubic yards of spoil material, the potential to utilize 30+ borrow sites and its determination of effect.*

**UDWRe Response:**

**Section 5.2 of the text has been revised to include a discussion of where in Chapter 5 cumulative effects are discussed. Potential cumulative effects are discussed in a separate section for each resource.**

**The disposal analysis of the soil, earth and rock excavated for the pipeline construction has been revised in the text. It is important to understand that cumulative effects under NEPA regulations would occur only from the combination of the effects of the proposed project with the effects of other projects on the resources being evaluated.**

**The use of the identified borrow and spoil sites has been under discussion and the decision has been made to avoid using them if possible. Materials from the pipeline and penstock trench excavation and tunneling will be used for bedding and backfill, and the spoils will be spread and compacted within the Right-of-Way. The substance of the comment is no longer applicable.**

**NPS Comment 5:**

**Water Resources:**

*Based on NPS calculations, diversions to the LPP may account for 1-2 ft drop in head at Lake Powell, which could dramatically affect hydropower production. This in turn, may trigger basin-wide drought contingency plans that release water from other upstream reservoirs to maintain minimum pool elevations in Lake Powell. Thus, the effects of diversions through the LPP could potentially affect reservoir elevations at, and releases from, Flaming Gorge, Navajo, and Aspinall. Please ensure analyses models extended drought conditions and reports the effects to Lake Powell elevations and the frequency and duration that Lake Powell is at or below minimum power pool. Per NPS comments dated July 5, 2012; we encourage additional analyses that include possible severe future hydrologic conditions within the Colorado River watershed (extremely low inflow and low lake level conditions).*

**UDWRe Response:**

Bureau of Reclamation updated the Colorado River System Simulation (CRSS) model for the LPP Proposed Action and the No Action Alternative, using historical hydrology and projected climate change hydrology as input data for separate model runs. The climate change inflow hydrology produces a wider variety and range of inflows compared to the historical hydrology. The 90<sup>th</sup> percentile (i.e., 90 percent probability) model results using projected climate change hydrology input data demonstrate a 2.5-foot increase to 2.1-foot decrease in Lake Powell elevation from 2024 to 2060, with an average 0.4-foot decrease under the Proposed Action. The climate change hydrology represents Reclamation's projections of extended drought conditions applied to the CRSS model. The climate change hydrology model results demonstrate the Proposed Action would increase the probability of Lake Powell elevations being below minimum power pool relative to the No Action Alternative by 0.9 to 3.6 percent during 16 of 46 years simulated. The CRSS modeling results are presented in Final Study Report 18, Surface Water Resources.

It is important to understand that the full diversion of 86,249 acre-feet per year in 2052 from Lake Powell is a portion of the Flaming Gorge Dam operation releases which include the State of Utah water right for the LPP Project, ranging from 4.3 to 12.2 percent of the actual releases made by Reclamation from 2006 through 2013. The LPP Project diversion effects on Glen Canyon Dam power generation have been accounted for using the CRSS model results to estimate foregone power generation, which is presented in Final Study Report 10, Socioeconomics and Water Resource Economics. The LPP Project diversion would not result in additional releases to Lake Powell from upstream reservoirs.

#### NPS Comment 6:

##### Water Resources:

*On page 5-286 it states that "Most of the Lake Powell elevation differences round to 0 percent elevation change between the Proposed Action and No Action under the DNF and CC inflow hydrology. The DNF inflow hydrology for No Action would have an average 3.7-foot higher annual elevation difference than the Proposed Action at the 10<sup>th</sup> percentile, a -0.1percent difference. The CC inflow hydrology for No Action would have an average 2-foot higher annual elevation difference than the Proposed Action at the 50<sup>th</sup> percentile, a -0.1percent difference." It may be misleading to state that the difference in elevation rounds to 0 percent between the proposed action and no action. These levels of vertical elevation change could result in a change horizontally of hundreds of feet of shoreline in some areas with a level of effects to recreation at GLCA, shoreline habitats, and cultural resources that should be considered in the analysis. For instance at Lake Mead National Recreation Area, they estimate that a 2 foot drop in elevation could result in 60 ft of new shoreline. A change of this magnitude (2'-3.7') could affect GLCA's ability to extend boat ramps. Furthermore, low lake elevations have rendered some boat ramps inaccessible so there could potentially be recreational economic effects from even small elevation changes. A curve showing horizontal/vertical distances and more analysis of the relationship between how the pipeline impacts elevation change and its relationship to shoreline would be helpful to elucidate potential impacts.*

*Operational effects of LPP on Recreation Resources at GLCA (Sec 5.3.13.2.1.1pg 5-578) should consider the potential effects of elevation changes (along with the non-linear relationship to reservoir elevation and water withdrawal) on recreation at GLCA as well as recreation-related infrastructure.*

*Appendix C is "in preparation." In order to provide meaningful comments we would need to see this appendix in full.*

*The text mentions modeling that was conducted by Reclamation in 2010 and 2015; however, it would be useful for the reader to be able to see more information about what was included in the Reclamation modeling and also the assumptions of that modeling. BOR provided us with more information verbally, but it would be helpful to others if those details were included with the reports.*

*On page 5-243 it states that "Lake Powell itself was not considered as part of the LPP Project study area for aquatic resources, except that the intake screens could potentially entrain native fish from the lake and facilitate the transfer of invasive aquatic species to other drainages" and on page 5-245 it states that "The impact of water withdrawal by the LPP Project has not been considered a major concern because of the relatively minor scope of the diversion in comparison to the normal daily, monthly, seasonal and annual variations." Again, given the relationship between elevation and shoreline, this would seem to warrant consideration of Lake Powell itself as part of the study area for the analysis with regard to aquatic resources, and potentially other resources and economic issues.*

**UDWRe Response:**

**Reclamation's CRSS model results have been updated in the Surface Water Resources section of Exhibit E. Reclamation's CRSS model results for DNF inflow hydrology at the 90<sup>th</sup> percentile (i.e., 90 percent probability that the value is at or below the 90<sup>th</sup> percentile value in a specified year) show that Lake Powell would have an average 0.2-foot decrease in elevation under the LPP Proposed Action. Please see the response to NPS Comment 5 regarding the climate change inflow hydrology producing a wider variety and range of inflows compared to the historical hydrology. For this reason, the climate change inflow hydrology is most appropriate for analyzing the potential effects of the LPP Project. The CRSS model results for climate change inflow hydrology at the 90<sup>th</sup> percentile demonstrate that Lake Powell would have an average 0.4-foot decrease in elevation under the LPP Proposed Action. The CRSS model results for climate change inflow hydrology at the 50<sup>th</sup> percentile demonstrate that Lake Powell would have an average 2.5-foot decrease in elevation under the LPP Proposed Action. The CRSS model results for climate change inflow hydrology at the 10<sup>th</sup> percentile demonstrate that Lake Powell would have an average 1.1-foot decrease in elevation under the LPP Proposed Action. The range of projected average decreases in Lake Powell elevations under the LPP Proposed Action from 0.4-foot to 2.5-foot at the 90<sup>th</sup>, 50<sup>th</sup> and 10<sup>th</sup> percentiles from 2024 through 2060 are less than the elevation decreases that occur from normal Lake Powell operations on a monthly, seasonal and annual basis, and are within the range of annual baseline conditions that occur under normal Lake Powell operations. For example, Reclamation reported the Lake Powell elevation on March 2, 2016 was 3,594.33 feet and the elevation on April 2, 2016 was 3,591.98 feet, a decrease of 2.35 feet. Therefore, the monthly, seasonal and annual changes in Lake Powell elevations occurring under baseline conditions that decrease or increase shoreline length and potentially regularly change the referenced recreation infrastructure and recreational opportunities, aquatic habitat and shoreline habitats, and cultural resources are greater than and encompass the smaller average changes in Lake Powell elevations that would occur under the LPP Proposed Action from 2024 through 2060.**

**The Aquatic Invasive Species Control and Monitoring Plan is filed with the License Application (Refer to the response to NPS Comment 2 in the General Comments section).**

**The 2015 CRSS model results and report by Reclamation is incorporated into Final Study Report 18 – Surface Water Resources and Appendix 2 to that report.**

**The description of the study area in Lake Powell has been revised in Exhibit E to clarify the extent of the aquatic resources study area.**

**NPS Comment 7:**

**Water Quality:**

*Based on results of modeling runs conducted by the State of Utah water quality in the Virgin River would not be directly or indirectly affected by the LPP construction or operation by the projected average daily return flow of seven cubic feet per second projected to occur with the pipeline. A key piece of infrastructure to meet this return flow objective will be Warner Valley Reservoir. If not implemented as envisioned, return flows would most likely impact existing water quality in the Virgin River.*

*The Environmental analysis for the project should identify water quality effects in the event the planned infrastructure does not materialize, and identify adaptive management provisions, including tracking and reporting on re-use and Virgin River flows. The adaptive management should include water quality monitoring and water re-use targets, which ensure no significant increases in downstream Virgin River flows, are not met.*

*Long-term minimal cumulative effects on surface water quality are mentioned; these water quality impacts should be described in the context of conditions of extended drought, minimal inflow, low lake elevations/*

*Comparing the effects of Action alternatives and the No Action alternative on Virgin River mean monthly flows (especially in the context of USGS gage accuracy) or annual flow duration curves is misleading. The NPS requests impact analysis on biotic resources (e.g., fisheries, aquatic macroinvertebrates, food web dynamics, riparian/wetland vegetation, available/usable habitat) or abiotic resources (e.g., thermal loading, channel and sediment dynamics, number or duration of zero-flow or low-flow days.)*

*It is noted that water quality in the Virgin River would not be directly or indirectly affected by the LPP construction or operation. This conclusion is based upon modeling of the Virgin River using the Virgin River Daily Simulation Model (VRDSM) for scenarios involving no LPP Project water and with LPP Project water to determine the potential for return flows to the Virgin River. The VRDSM results indicate that LPP return flows to the Virgin River would be within the measurement accuracy of the USGS gages on the Virgin River and changes in river flows would not be measurable (UDWR 2011b). The project planning and model assumptions, indicate that all new water transported by the project would be recycled or otherwise reclaimed with no significant new return flows to the Virgin River. Based upon modeling including these assumptions, the revised draft study report views that water quality impacts to the Virgin River will not occur and can be eliminated from further analysis.*

**UDWRe Response:**

**The comment mis-interprets the LPP return flows as modeled by the Virgin River Daily Simulation Model (VRDSM) and the Warner Valley Reservoir. The potential future**

Warner Valley Reservoir would be a Washington County Water Conservancy District (WCWCD) project independent of the UDWRe LPP Project, and the VRDSM results do not include the Warner Valley Reservoir to store LPP Proposed Action return flows. An off-stream reservoir, named Graveyard Wash Reservoir, previously analyzed in a BLM EA on the St. George Water Reuse Project, would store up to 3,000 acre-feet of reuse water pumped from the St. George Regional Water Reclamation Plant. The Graveyard Wash Reservoir would function as the system storage reservoir modeled in the VRDSM under the LPP Proposed Action. The simulated flow differences between the LPP Proposed Action and No Action alternative are within the measurement accuracy of the USGS gages on the Virgin River, and measureable changes in water quality are not expected to occur with the simulated flows in the river at the identified model nodes. The VRDSM results incorporate Reclamation's projections of climate change conditions in the Virgin River basin and resulting streamflows, which include long-term drought and decreased inflows. The updated VRDSM results have been used to revise the cumulative effects analysis for water quality and surface water resources in Exhibit E.

The flow duration curves prepared using the VRDSM results represent a continuous record of discharge (flow) at the modeling node and percent of the time the flows occur, over the 72 years of average daily stream flow data. The flow duration curves for the LPP Proposed Action and No Action alternative demonstrate nearly identical flows at every percent exceedance, indicating the Virgin River would have approximately the same flows with and without the LPP Project. The water quality indirect effects of the LPP Project water are not expected to be measurable in the Virgin River and would be well within the range of baseline conditions that occur in the Virgin River.

The St. George Regional Water Reclamation Facility (SGRWRF) effluent currently reused by golf courses, schools, parks, and for agricultural irrigation would increase in flow from 8 acre-feet per day (4 cfs) to 52 acre-feet per day (26.3 cfs) as the population grows and the M&I water demand increases. The SGRWRF effluent averages turbidity of 0.4 NTU, E. coli of 0 coliform/100 ml, pH of 7.5, and temperatures ranging from 21.4 °C during spring to 26.8 °C during summer. Application of the reuse effluent to the thermic soils of the St. George metropolitan area would decrease the water temperature to between 15 °C and 21 °C. The UDWRe estimates that 50 percent of the water applied for outdoor watering returns to the Virgin River as non-sewered flow, gradually reducing to 30 percent by 2050. The non-sewered return flow of the reuse water to the Virgin River is projected to range from 13.1 cfs to 7.9 cfs with the LPP Project Proposed Action. The Virgin River flows at the UT/AZ state line would range from averages of approximately 142 cfs during winter to 62 cfs during summer, and water quality conditions include turbidity ranging from 12 FNU to 1,210 FNU, E. coli >2400/100 ml, pH of 8.0, and temperatures ranging from 18.1 °C during spring to 25.5 °C during summer. Therefore, the projected water quality conditions in the Virgin River at the UT/AZ state line under the influence of LPP Project return flows from reuse water would not measurably change the turbidity, E. coli, pH and temperature values. More detailed analyses of water quality conditions and the factors influencing return flow water quality are included in Final Study Report 17, Surface Water Quality.

NPS Comment 8:

*Glen Canyon National Recreation Area*



*The NPS requests additional analysis in Ch. 5 in the areas of wildlife and special status animal species. Although the GLCA species list was supplied to the contractors, the sections on wildlife were not incorporated, nor were the botany and special status plant species section incorporated. The NPS requests that wildlife section be incorporated into the document, to ensure wildlife concerns are adequately addressed.*

**UDWRe Response:**

**The Glen Canyon National Recreation Area (GCNRA) species list has been incorporated into the Final Study Reports on Wildlife Resources (21), Vegetation Communities (15), and Special Status Plant Species and Noxious Weeds Assessment (12). Applicable revisions have been incorporated into Exhibit E.**

**NPS Comment 9:**

**Glen Canyon National Recreation Area**

*The NPS requests additional analysis on two plants listed on the Endangered Species list (Endangered Species Act (Section 7)), one of which occurs in GLCA. It is our understanding that Federal Energy Regulatory Commission (FERC) has to consult on all listed/candidate species under Endangered Species Act Section 7.*

**UDWRe Response:**

**Additional analyses have been performed on two plant species listed on the Endangered Species list, one of which occurs in GCNRA. FERC will consult on all listed and candidate species within the area of probable effect under Endangered Species Act Section 7.**

**NPS Comment 10:**

**Glen Canyon National Recreation Area**

*The NPS request additional information regarding climate change, forecasts for potentially very low lake levels, and increased variability in storm events. Some studies have suggested that Lake Powell could reach "dead pool" in the next 20-30 years with climate change and related hydrology impacts. Also, the monitored storm events in the document may have been small or typical events, but there have been several major flooding events in recent years in the washes where the pipeline would cross - some of these events are likely to down cut more than the suggested depth of five or so for the pipe and casement. For example, a 2015 event down cut one of the washes at least five to six feet near Greenhaven along Highway 89.*

**UDWRe Response:**

**Please see the response to NPS Comment 6. Reclamation is the Federal government's designated agency for leading climate change studies on the Colorado River. Reclamation's CRSS modeling for the LPP Project includes climate change inflow hydrology and simulates the probability of Lake Powell decreasing to below the minimum power pool under the LPP Project Proposed Action. Based on the climate change inflow hydrology, Reclamation's CRSS simulation indicates the maximum probability of Lake Powell decreasing to below the minimum power pool under the No Action alternative is 35 percent in 2045, and the maximum probability of Lake Powell decreasing to below the minimum power pool under the LPP Project Proposed Action is 35 percent in 2045. The LPP Project**

Proposed Action results in slightly higher probabilities (0.9 percent to 3.6 percent higher than the No Action alternative) of Lake Powell being below minimum power pool in 16 of the 46 years simulated. During the remaining 30 years simulated, there is no difference. Final Study Report 18, Surface Water Resources, presents the results of Reclamation's CRSS modeling and includes the Reclamation CRSS modeling report as Appendix 2.

The proposed pipeline alignment along Highway 89 is on the uphill side of the highway, taking advantage of the highway embankment and established drainage crossings to control the drainage grade and prevent head-cutting during flooding events. Even with the highway and established drainage crossings functioning as grade controls in drainages, the pipeline would be protected to prevent undermining of the bedding and the constructed pipeline by flood flows.

**NPS Comment 11:**

**Right-Of-Way**

*As stated on page 5-633: UDOT indicates that acquisition of an LPP Project Right-of-Way (ROW) within the Highway 89 ROW is possible. But where possible, it is the preference of Utah Department of Transportation (UDOT) that the LPP Project ROW lie outside the Utah highway ROWs. All UDOT highway and interstate crossings would be needed to be bored to avoid any conflict with current transportation planning.*

**UDWRe Response:**

**The comment has been noted. Both open cut and boring technologies are available, and would be used based on permitting requirements, best practices, cost, and construction efficiency. In many cases, the method used would be permitted by the responsible agency in coordination with UDWRe.**

**NPS Comment 12:**

**Zion National Park Comments:**

*The Lake Powell Pipeline Project as described in the Preliminary Licensing Proposal and revised Draft Study Reports does not pass in close proximity to Zion National Park nor does it discharge upstream of the park. For this reason, the potential impacts to the park are limited to ancillary impacts that result from population growth in Washington County and the potential for introduction of invasive aquatic species to the Virgin River system.*

*We concur with the Revised Draft Aquatic Resources Study Report in its identification of the accidental release of water and the resultant potential transfer of invasive or exotic species as a source of potential impact. While there are other avenues for transfer of these organisms through the Colorado River system and transport of boats, the LPP could provide a means of direct and rapid exchange from Lake Powell to the Virgin River system. This risk is minimized by the general absence of a direct discharge to the waters of the Virgin River. However, the scenario described in section 4.4 Summary, of a circuitous, but nonetheless real potential for transfer of aquatic organisms through a pathway from Sand Hollow Reservoir to Quail Creek Reservoir and then through infrequent releases from that latter reservoir to the Virgin River. For this reason we suggest that this impact cannot be entirely mitigated. Also, Section 4.3.5 of the Special Status Aquatic Resources Species Study Report eliminates the interbasin transfer of LPP water from further analysis based on the assertion that there is no direct connection between*

*Lake Powell Water and the Virgin River system. This appears to be inconsistent, and we suggest that this analysis topic be retained and carried through to a full analysis.*

**UDWRe Response:**

**Please see the response to NPS Comment 2 in the General Comments section regarding the Aquatic Invasive Species Control and Monitoring Plan. Should Sand Hollow Reservoir become infested with Quagga mussels, despite all the prevention and control measures outlined in the project's aquatic invasive control plan, there are measures which would be implemented to manage the infestation and control any transfer to the Virgin River. If Sand Hollow Reservoir becomes infested, it would be necessary to implement treatment at the reservoir's outlet structure to prevent colonization in the water system and its appurtenances. This would prevent any transfer to Quail Creek Reservoir. Should Quail Creek Reservoir become infested, treatment would be applied at its two outlet structures, the main dam and the south dam. At the same time, any discharges from the reservoir would be shut off. There are many levels of protection to protect the Virgin River from any aquatic invasive species infestation resulting from the LPP Project. Closing the outlet valve at Quail Creek Reservoir, combined with additional treatment, would completely address this issue.**

**NPS Comment 13:**

**Zion National Park Comments:**

*The Wild and Scenic River discussion (Section 5.3.14.1.2.6) on page 5-634 is out of date because it does not describe the Wild and Scenic River Segments in the basin that were designated under the Omnibus Public Land Management Act of 2009. This act designated 39 river and tributary segments in Zion National Park and on adjacent Bureau of Land Management lands. Refer to the Zion National Park Foundation Document (page 59 and found at <http://www.nps.gov/zion/learn/management/index.htm>) for a description and full listing of these segments. We concur with the conclusion that the LPP will not impact these designated river segments.*

**UDWRe Response:**

**The Wild and Scenic River discussion has been updated in Exhibit E and Final Study Report 6, Land Use Plans and Conflicts.**

**NPS Comment 14:**

**Climate Change Comments:**

*The NPS appreciates the use of published research pertinent to climate change and Lake Powell, the tree ring analysis {Woodhouse et al. 2006} seems sound, and the chapter's conclusions follow from the scientific information.*

*Additionally we appreciate the studies and models identified in the climate change section of the Environmental Analysis identifying the likelihood of distinct future water shortages with most identifying highly significant deficits in water availability.*

*Hydrological analyses of impacts to the Virgin River, especially during peak runoff months, should include additional monitoring and modeling to reduce the high variability in the presented*

*study results. The identified reductions in flows during peak water demand months (up to 50% in June) could have significant ecological consequences.*

*The document minimally addresses the issues of needed water conservation strategies in both the Upper and Lower Colorado River Basins and even identifies that currently there are no plans to curtail Upper Basin water uses.*

**UDWRe Response:**

**The LPP Project Proposed Action would not measurably change Virgin River flows from No Action (Base Case) conditions during peak runoff months or other months of the year. Virgin River flows at most of the VRDSM nodes would increase by several cubic feet per second. The flow increases are within the measuring accuracy of the flow measuring devices at the VRDSM nodes.**

**Water conservation strategies are in place in both the upper and lower basins of the Colorado River. Even greater strategies are being implemented.**

**The upper basin has always been able to deliver lower basin allocations despite over a decade of drought in recent years. In numerous recent years the upper basin has delivered more than the required quantity. The river system is managed by the compact and all subsequent agreements, etc. including the current equalization strategy.**

**The upper basin has agreements in place for many years to deal with shortages. Bureau of Reclamation modeling of the river and especially Lake Powell conditions includes results of full utilization of Utah's allocation and projected climate change and drought conditions.**

**NPS Comment 15:**

**Trails Comments:**

*The revised cultural resources report sent via CD contains only Appendices A-D (E-M missing), the NPS is unable to adequately comment on missing appendices.*

*Although the Old Spanish National Historic Trail was discussed in the historic context section it was not addressed in the summary section. It is acknowledged that the cultural resources inventory did not find physical evidence of the trail, but this section could discuss what efforts were made to locate it, offer some hypotheses regarding why they could not locate it, and discuss what impacts the project may have (if any) on the qualities that made the Old Spanish Trail a National Historic Trail.*

**UDWRe Response:**

**The historic resources section of the Class III Report has been revised to discuss efforts made to locate the Armijo Route of the Old Spanish Trail, provide hypotheses regarding why the trail could not be located during field surveys, and address potential impacts the LPP Project would have on the qualities that made the trail a National Historic Trail.**

**USFWS Comment 1:**

*Overall, more evaluation of indirect effects of the Project is needed to allow for sufficient federal review of environmental impacts. The Project proponent's evaluation methods of induced growth and development should be re-assessed to address the indirect effects of the proposed action. For example, the Project proponent's current evaluation methods include three growth scenarios for the action alternatives, utilizing the same assumptions for population growth within developable lands (see pages 5-674 and 5-675 of the PLP). We do not consider this to be a complete or adequate analysis because there is no evaluation using the same models of induced growth and development for the No Action Alternative. As such, there were no comparisons made between the pipeline alternatives and the no action alternative, and no attempt to identify the incremental effect on growth that would result from the Project.*

*We recommend the Project proponent evaluate the indirect effects of the Project in a manner consistent with other similar water development projects. For example, studies of the Coconino Water Pipeline Project, which is similar to this Project, found that the proposed pipeline would alter rates of growth and growth patterns, and these changes would adversely impact sensitive resources. Increased rates of growth were also documented after water development projects throughout the western United States, including at Quail Creek Reservoir in Washington County, Utah (Heffernen and Muro, 2001).*

*We believe a detailed analysis of induced growth and development is warranted because there is developable land available in the areas served by the Project and the Project area exhibits evidence of growth pressure and future water scarcity (Dixie Conservation District 2012). Comparative analyses should be done to evaluate the scale of potential growth induced effects in the region and the rate of potential growth development patterns and densities between the pipeline and no action alternatives.*

*In our comment letter dated May 9, 2011, we expressed concern regarding the DSR #6 exclusion of threatened and endangered species habitat from future development scenarios. The preliminary license plan should include an evaluation of the indirect effects of the Project to threatened and endangered species, other wildlife resources, and their habitats, including effects associated with induced growth. As currently written, the preliminary license plan specifically excludes threatened and endangered species critical habitat areas from the future growth and development area evaluation (see pages 5-665 and 5-666 of the PLP). We believe this exclusion is inconsistent with ESA Section 7 consultation regulations and policy guiding the analysis of effects of the proposed action. For purposes of Section 7 consultation, you should also identify and name as your action area, all areas affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action.*

*Under Section 7 consultation of the ESA, we must consider the direct and indirect effects of the proposed action, together with the effects of other interrelated and interdependent actions (50 CFR § 402.02). Indirect effects "are those that are caused by the proposed action and are later in time, but still reasonably certain to occur." Multiple court cases support our interpretation that if a project will facilitate population growth or development, then that growth must be considered an indirect effect under ESA consultation (see *Florida Key Deer v. Stickney*, 864 F. Supp. 1222; *City of Davis v. T. Coleman*, 521 F. 2d 661). We will evaluate all indirect effects of the Project, including induced growth, during ESA Section 7 consultation. Therefore, it is important that the preliminary licensing plan contain adequate information to assist in this process.*

*In particular, it is essential to include the endangered Holmgren milkvetch (*Astragalus holmgreniorum*) designated critical habitat in the future growth and development area*



*evaluation. Holmgren milkvetch occurs as six populations in Washington County, Utah and Mohave County, Arizona. Urban development is the primary threat to Holmgren milkvetch on non-federal lands in Utah and Arizona, which comprise 55 percent of the species' designated critical habitat.*

*The St. George Master Plan shows that large portions of Holmgren milkvetch designated critical habitat are within the South Block residential, commercial, and industrial zones where future development is planned. This area is known as the Holmgren milkvetch Central Valley population. The Central Valley population is one of the largest populations of Holmgren milkvetch, and comprises 31 percent of the total population and 18 percent of the species' designated critical habitat. The species may not be able to sustain the loss of the Central Valley population if development proceeds without consideration for habitat protection. To date we have been able to purchase and protect only 17 acres of Holmgren milkvetch habitat in the Central Valley population area. Land costs are high and thus it is difficult to acquire sufficient acreages for long-term protection of this species.*

*Induced growth of the South Block area should be included in the Project's effects analysis. All areas within the South Block Master Plan area are potentially developable land (see Figures 5-186, 5-187, 5-188, and 5-189 in the PLP) and it is reasonable to assume that the entire Holmgren milkvetch critical habitat unit may be lost to development. It is likely that the Lake Powell Pipeline will provide sufficient water supplies to at least allow the South Block area to develop more rapidly than without the added water resource. Rapid development will reduce our ability to find sufficient funding in a timely manner to protect additional milkvetch habitats. Induced growth and development from the Project is likely to adversely affect the endangered Holmgren milkvetch and its designated critical habitat in the species' Central Valley population.*

*The five remaining Holmgren milkvetch populations on federal lands have declined to perilously low numbers and population augmentation efforts are underway to reverse the declining trends. The species also has an inherently high risk of extinction because it exhibits large variations in population structure on an annual basis (Meyer 2015). The current estimated total population size is less than 6,000 adult plants.*

*Given our concerns about the significant impacts to Holmgren milkvetch that may result from the Project's indirect effects, it is important that either FERC or the Project proponent perform the proper analysis of direct and indirect effects of the action, including a thorough evaluation of the potential effects of induced growth. We also recommend the Project proponent consider protecting occupied or designated critical habitat for Holmgren milkvetch in perpetuity, through land purchases, land exchanges, conservation easements, or local ordinances. These types of mitigation efforts could offset impacts and assist with recovery of Holmgren milkvetch, as well as support the smart growth principles outlined in the preliminary licensing plan.*

*In summary, we disagree with the Project proponent's conclusions that induced growth and development associated with this Project is not significant. The conclusion is based on an incomplete growth and development evaluation that did not consider impacts to threatened and endangered species and their designated critical habitat. We recommend additional analysis and the incorporation of mitigation strategies where impacts cannot be avoided.*

**UDWRe Response:**

- The reasonably foreseeable growth-inducing effects of the proposed project have been addressed in the project studies, taking into account population growth projections by the Utah Governor’s Office of Management and Budget (GOMB), municipal and county land use planning, current and projected land uses, and areas available for development.
- To the extent that a hypothesized effect has not been considered in the project studies, it is because it is not a reasonably foreseeable effect caused by the project. Addressing a highly speculative scenario of which the project is not the proximate cause is not required by the law, nor could it be addressed with any cogency. While the reasonably foreseeable growth-inducing effects of a project must be addressed, the U.S. Supreme Court has rejected the notion that a “but for” causal relationship is all that is needed to make an effect reasonably foreseeable. Rather, there must be a “reasonably close causal relationship between the environmental effect and the alleged cause.” (Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766 (1983); U.S. Department of Transportation v. Public Citizen, 541 U.S. 752 (2004)).
- Regardless of whether the No Action Alternative, the Lake Powell Pipeline Alternative, or the No Lake Powell Pipeline Alternative is chosen, any private and State School Trust Lands can be developed under current land use plans. It is not reasonable to speculate which areas will be developed under which alternative, since any property may or may not be developed under any alternative.
- Neither the project proponent nor the agencies responsible for determining whether to permit the proposed project have the authority to limit growth or dictate which private or state lands will be developed and which will not. Washington County Water Conservancy District (WCWCD) has no control over land use planning, development or decisions and cannot insert itself into these decisions for the purpose of curbing growth. It is a single-purpose agency with one sole function: to develop and supply the water required to meet anticipated demand. Anticipated demand is derived from the actions of governmental entities that have general governing authority, that is, planning and zoning and other requirements that influence growth. Reasonably anticipated water demand has been calculated using projections for population growth by the GOMB, municipal and county land use planning, current and projected land uses, and areas available for development. This information is supplemented by the fact that the Mountain States area is the fastest-growing region in the United States, and within that region, the project area is one of the fastest growing communities (<https://www.commerce.gov/news/blog/2016/03/us-census-bureau-releases-population-estimates-nations-cities-and-counties>, posted 3/24/2016, 10:34 a.m.), continuing a population boom that began in the 1970s.
- Despite the growth that is inevitable under each alternative, the major municipalities in Washington County where most of the significant growth is projected to occur, as well as the County, have committed to Vision Dixie principles that would not lead to urban sprawl.

- The cases (Florida Key Deer v. Stickney, 864 F. Supp. 1222 (1994); City of Davis v. T. Coleman, 521 F. 2d 661 (1975)) the US Fish and Wildlife Service cited in its comment as requiring more analysis than what has already been done are inapposite:
  - In Florida Key Deer, a U.S. District Court in Florida held that FEMA had a duty to consult with FWS under Section 7 of the Endangered Species Act where the National Flood Insurance Program *directly* affected development on private lands within listed Florida Key Deer habitat because without flood insurance coverage in this area, development virtually *would not occur*. Unlike the private lands in Florida Key Deer, nothing prevents any of the private and State School Trust Lands from being developed in this project area, regardless of whether the project is built or not. Section 9 of the ESA expressly does not prohibit the taking of listed *plants* on areas not under Federal jurisdiction.
  - In Davis, responsible agencies refused to conduct an Environmental Impact Statement, concluding instead that an interstate freeway interchange in the middle of an agricultural area adjacent to the City of Davis would have no significant impact. The Ninth Circuit directed the agencies to issue an EIS. In contrast, an EIS will be prepared for this project, analyzing all reasonably foreseeable direct and indirect effects of the proposed action.

Cases more commensurate with the proposed project include the Ninth Circuit case Laguna Greenbelt v. US Department of Transportation, 42 F.3d 517 (1994), where the proposed toll road was designed to relieve the needs of an already-planned-for and growing population; the U.S. District Court case Georgia River Network v. US Army Corps of Engineers, 334 F. Supp. 2d 1329 (2003), where the purpose of the proposed reservoir was “to keep up with the water demands of [the county’s] increasing population, not that the projected population growth rate [was] attributable to the construction of the Reservoir;” and the case Utahns v. US Department of Transportation, 305 F.3d 1152 (2002), where the Tenth Circuit found it reasonable for the agencies to rely on information from planners to conclude that “ultimate growth patterns and planned land uses would not change as a result of building the Legacy Parkway.”

#### USFWS Comment 2:

*(No Action Alternative) The PLP and DSRs do not fully describe and analyze effects to resources under the No Action Alternative. In addition, many of the documents do not compare effects between the No Action Alternative and each action alternative, including the Proposed Action. This makes evaluation and comparison of Project action alternatives and their effects to resources difficult, as there is no baseline evaluation on which to compare effects. We recommend the Project proponent revise the PLP and DSRs to properly incorporate the No Action Alternative, its effects on the natural and human environment, and provide comparison between the No Action Alternative and all action alternatives.*

#### UDWRe Response:

**The Final Study Reports and Exhibit E have been revised to include analysis of effects on resources of the natural and human environment under the No Action Alternative.**

### USFWS Comment 3:

#### **(No Action Alternative and the No Lake Powell Pipeline Alternative)**

*The text in Chapter 3 of the PLP does not adequately differentiate between the No-Action Alternative and the No Lake Powell Pipeline Alternative. Our understanding of the No Action Alternative is that the Washington County Water Conservancy District (WCWCD) would fully utilize existing water in Washington County by 2028 using a combination of actions that could include existing supplies, planned water supply projects, wastewater reuse, water conservation measures, and conversion of water use from agriculture uses to culinary uses. Alternately, our understanding of the No Lake Powell Pipeline Alternative is that it describes actions that would occur to provide water to Washington County in the absence of the Lake Powell Pipeline.*

*For example, discussion of the No Action Alternative describes the following:*

*The 2028 potable water supply of about 72,362 acre-feet per year and secondary water supply of 8,505 acre-feet per year would include existing supplies, planned WCWCD water supply projects, wastewater reuse, and future agricultural water conversion resulting from urban development of currently irrigated land.*

*The No Lake Powell Pipeline Alternative provides additional details on specific actions, but also includes all of the same measures as described in the No Action Alternative:*

*The WCWCD would implement other future water development projects currently planned by the District, develop additional water reuse/reclamation programs, continue to implement new water conservation measures, and convert additional agricultural water use to municipal and industrial (M&I) use as a result of urban development in agricultural areas through 2025.*

*As currently written, the text in Chapter 3 confuses the reader as to what actions do or do not occur under the No Action as compared to the No Lake Powell Pipeline Alternative. This also makes evaluation and comparison of the No Action and Project action alternatives and their effects to resources difficult. Since the description of both alternatives are describing a future condition, we recommend the Project proponent revise Chapter 3 to provide more information on what actions would likely occur in the future under the No Action Alternative so it is distinguishable from the No Lake Powell Pipeline Alternative. This information should include details about which projects are reasonably certain to occur under the No Action Alternative.*

### UDWRe Response:

<b>Revisions have been made to Chapter 3 clarifying No Action and No Lake Powell Water alternatives.</b>
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### USFWS Comment 4:

#### **(Aquatic Invasive Species Control)**

*We appreciate inclusion of additional information in the PLP and DSRs on control of aquatic invasive species. However, we recommend the Project proponent include a separate plan to prevent the spread of established quagga mussels (*Dreissena bugensis*) and gizzard shad (*Dorosoma cepedianum*), as well as a contingency plan to address the spread of zebra mussels (*Dreissena polymorpha*) should they become established in Lake Powell. The plan should include specific prevention measures to prevent transport of veliger larvae through the water*

*delivery system and should also incorporate proactive measures to minimize distribution of invasive aquatic species into the Virgin River watershed.*

*In addition, we recommend the PLP and DSRs address any water quality issues associated with Dreissena control measures for the Project. The methodology to determine how water quality is affected by control measures would be specific to the nature of the control (e.g., chemical, biological), and should be evaluated based on available studies. The primary methodology needed to assess water quality issues from Dreissena control will require information derived from Material Safety Data Sheets (MSDS), an analysis of the amount of control applied to the pipeline system, and the amount of water the system will be conveying. The analysis typically requires only simple calculations and water quality computer modeling.*

**UDWRe Response:**

**Please see the response to NPS Comment 2. The Aquatic Invasive Species Control and Mitigation plan includes screening to less than 25 microns, which would control transport of gizzard shad through the LPP Project as well as veliger larvae, eggs and other Dreissena species life forms.**

**The water quality analysis for proposed molluscicide application has been addressed in Final Study Report 17 and Exhibit E, using the MSDS for the most effective currently available molluscicide.**

**USFWS Comment 5:**

**(Water Quality and Quantity)**

*Water withdrawal will occur just upstream of Glen Canyon Dam. In recent years, low dissolved oxygen from low lake levels adversely affected trout populations below the dam. We recommend the PLP and Study Reports 2 and 11 discuss the water quality effects to fish in the Colorado River below Glen Canyon Dam. We also recommend the PLP and Study Report 18 address reservoir levels at Lake Powell concurrent with ongoing management activities at the Glen Canyon National Recreation Area and Grand Canyon National Park. We recommend your documents include an assessment on how lake levels could influence decisions on water management contained in the final Colorado River Interim Guidelines for Lower Basin State Shortages and Coordinated Operations for Lake Powell and Lake Mead, as well as the ongoing Long-Term Experimental Management Plan for operation of Glen Canyon Dam.*

**UDWRe Response:**

**The updated water quality modeling of Lake Powell performed by Reclamation compares the dissolved oxygen concentrations between the LPP Project Proposed Action and the No Action Alternative in the reservoir immediately upstream from Glen Canyon Dam. The Proposed Action compared to the No Action Alternative would result in simulated dissolved oxygen concentrations of 0.1 mg/L lower at 25 meters depth, 0.2 mg/L lower at 50 meters depth, and 0.1 mg/L higher at 100 meters depth. The simulated differences in dissolved oxygen concentrations between the Proposed Action and No Action Alternative are very small and are actually less than the instrument accuracy of typical dissolved oxygen sensors used to measure dissolved oxygen. Current dissolved oxygen sensors have accuracies ranging from +/- 0.1 mg/L to +/- 0.2 mg/L. Therefore, the Proposed Action effects on dissolved oxygen concentrations in Lake Powell immediately upstream of Glen Canyon Dam would not be measurable.**



The simulated dissolved oxygen concentrations in Glen Canyon Dam releases differ by 0.03 mg/L between the LPP Project Proposed Action and the No Action Alternative. These differences in dissolved oxygen concentration resulting from the Proposed Action would be too small to be measured by field instruments. Therefore, the Proposed Action would not have measurable effects on dissolved oxygen concentrations in Glen Canyon Dam releases, based on the updated water quality modeling by Reclamation.

The LPP Project diversions under Reclamation's CRSS modeling with climate change inflow hydrology would result in reservoir levels during the period from 2024 through 2060 that are well within the monthly, seasonal and annual changes of the normal operation of Lake Powell. The LPP Project changes in reservoir levels would have no effect on ongoing management activities in Grand Canyon National Park and an unmeasurable effect on ongoing management activities at GCNRA. The ongoing Reclamation management actions involving Lake Powell referenced in the comment, which comprise interrelated actions with the LPP Project, are evaluated in Exhibit E in terms of reservoir level changes that could influence decisions on water management through Glen Canyon Dam operations.

**USFWS Comment 6:**

**(Virgin River Surface Flow Modeling)**

*The discussion of the "Base Case" of surface water flow in the Virgin River using the Virgin River Daily Simulation Model (VRDSM) identifies the case as full utilization of existing water rights, no additional storage capacity, and no Lake Powell Pipeline deliveries. Previous correspondence from UBWR to us state the "Base Case" intends to represent the No Action Alternative. However, the No Action Alternative as written in Chapter 3 describes the use of additional storage capacity.*

*Therefore, it is not clear that the analysis of the "Base Case" of future conditions actually represents the No Action Alternative as evaluated under the PLP. So that we can properly evaluate effects to listed species in the Virgin River under the ESA, we need a revised analysis using a "Base Case" that encompasses a clearly defined No Action Alternative (see No Action Alternative comments above). We recommend the Project proponent revise the "Base Case" VRDSM model using a clearly defined No Action Alternative and revise any impact analysis in the PLP and DSRs for surface water, aquatic resources (including special status aquatic resources), and wildlife resources (including special status wildlife resources) based on any changes from the revised analysis.*

**UDWRe Response:**

The No Action Alternative as described in Chapter 3 does not involve additional storage capacity; however, the No Lake Powell Water Alternative would involve the construction and operation of Warner Valley Reservoir to store reuse effluent and Virgin River flows diverted at the Washington Fields Diversion. Revisions have been made to Chapter 3 in Exhibit E clarifying No Action and No Lake Powell Water alternatives.

The VRDSM prepared by UDWRe simulates a Base Case (future without the LPP Project, also indicated as Scenario 1, which is equal to the No Action Alternative) and the LPP Project (future with the LPP Project, also indicated as Scenario 2, which is equal to the Proposed Action). The impacts of each alternative would begin when the LPP Project would begin delivering water to Sand Hollow Reservoir to meet M&I water demands by

the growing population. The full impacts of each alternative would occur in 2052 when the LPP Project delivers 69,000 acre-feet per year to Sand Hollow Reservoir and 13,249 acre-feet into Apple Valley to meet M&I water demands by the growing population.

The No Action Alternative (Base Case) as simulated using the VRDSM would not include any additional storage, and represents the Virgin River system as it is currently developed with existing facilities under full utilization of water rights, if it were to exist in its present state since the period of record began in 1941. Water demand in the St. George metropolitan area and Washington Fields Secondary area are iteratively adjusted in the VRDSM such that the maximum shortage for either area never exceeds 10 percent. Reclamation's analysis of projected climate change on Virgin River flow is incorporated into the VRDSM.

The LPP Project Proposed Action (future with LPP) as simulated using the VRDSM would annually import 69,000 acre-feet of water from Lake Powell into Sand Hollow Reservoir. The Proposed Action would include storing reuse water in a re-regulating water storage reservoir with 3,000 acre-feet capacity (Graveyard Wash Reservoir). Virgin River water is not used in the VRDSM Proposed Action to satisfy demand in the Washington Fields Secondary area. Reclamation's analysis of projected climate change on Virgin River flow is incorporated into the VRDSM.

The VRDSM model results of Virgin River flows under the No Action Alternative and the Proposed Action are presented in Final Study Report 18 and Exhibit E. These results, shown in flow duration curves, demonstrate there would be no measurable difference in Virgin River flows between the No Action Alternative and the Proposed Action at the five model nodes downstream from Quail Creek Reservoir when the full delivery of LPP water would occur in approximately 2052. The flow duration curves represent 72 years of daily stream flows in the Virgin River, and show the percent of time river flows would occur under the No Action Alternative and Proposed Action. These flow duration curves are superimposed on each other, indicating the Virgin River flows would not be measurably different between the two alternatives throughout the range of flows. Therefore, the surface water resources and aquatic, riparian and terrestrial resources and habitats as influenced by Virgin River flows would not be measurably changed between the No Action Alternative and the Proposed Action. The LPP Project return flows would have no measurable indirect effects on the Virgin River as simulated by the VRDSM and demonstrated by the flow duration curves representing model nodes between Quail Creek Reservoir and the Utah/Arizona state line.

#### **USFWS Comment 7:**

##### ***(Virgin River Flows)***

*The Project could potentially affect stream flows, and in turn native and ESA listed fish and migratory birds in the Virgin River system. Project water management should be integrated with and analyzed for effects to the flows needed for survival and recovery of the endangered roundtail chub (Platypharodon argenteus), the endangered Virgin River chub (Gila seminuda), the endangered Southwestern willow flycatcher (Empidonax traillii extimus), and the threatened Western yellow-billed cuckoo (Coccyzus americanus). We recommend the Project identify opportunities for flow augmentation, and the Project's operational flexibility to benefit Virgin River resources. It should also identify water rights that may influence management flexibility.*

#### **UDWR Response:**

The LPP Project water would flow into Sand Hollow Reservoir. From there, it would be used in the same manner as Virgin River water is used today. It would be treated to culinary standards and delivered to municipal customers. The impacts of that use have been modeled extensively, as set forth in the VRDSM and the Indicators of Hydrologic Alteration (IHA) and Dundee Hydrologic Regime Assessment Method (DHRAM) quantitative modeling results presented to the Virgin River Resource Management and Recovery Program technical committee and administrative committee, which includes representatives from The Nature Conservancy and Federal resource management and regulatory agencies including: USFWS, NPS, BLM, and USFS. Flow duration curves developed from historical data were used to predict future daily stream flows without the LPP and with the LPP. A flow duration curve is a cumulative frequency distribution showing the percent of time specified discharges are equaled or exceeded during a given period. It combines in one curve the flow characteristics of a stream throughout the range of discharge, regardless of the sequence of occurrence. If the streamflow during the period on which the flow duration curve is based represents the long-term flow of the stream, the curve may be considered a probability curve and used to estimate the percent of time that a specified discharge will be equaled or exceeded in the future (United States Geological Survey. 1959. Manual of Hydrology: Part 2. Low Flow Techniques, Flow-Duration Curves. Geological Survey-Water Supply Paper 1542-A. 33 pp.). The Virgin River flows used in the flow duration curve analysis represent historical flow data from the period October 1940 through September 2013. The daily stream flow data for the future without the LPP and the future with the LPP generated from the VRDSM flow duration curves were analyzed using IHA-DHRAM for the Virgin River through the St. George metropolitan area. A method of quantitatively estimating stream health using daily stream flow data has been developed by the U.S. Environmental Protection Agency (U.S. Environmental Protection Agency and Texas A&M Blackland Extension and Research Center. 2011. An Approach for Estimating Stream Health Using Flow Duration Curves and Indices of Hydrologic Alteration. U.S. EPA Region XI Water Quality Protection Division, Dallas Texas). The EPA documented method uses IHA software developed by The Nature Conservancy (TNC) to quantify mean percent changes of mean daily flows and mean percent changes in the coefficients of variation of statistical parameters calculated from the daily stream flow data (The Nature Conservancy. 2007. User's Manual for the Indicators of Hydrologic Alteration (IHA) Software. The Nature Conservancy, Charlottesville, Virginia). DHRAM provides a method to classify the results of the IHA analysis as having no risk to severe risk of impacts to the stream (Black, et al. (Aquatic Conservation: Marine and Freshwater Ecosystems) 2005. DHRAM: a method for classifying river flow regime alterations for the EC Water Framework Directive 15: 427-446).

There would be no measurable impacts on stream flows and thus no measurable effects on native and ESA listed fish and migratory birds in the "Virgin River system." The management of district water has been integrated and analyzed in the development of the Virgin River Resource Management and Recovery Program (2002). USFWS has concluded that this approach is not likely to adversely affect the roundtail chub, Virgin River chub, or southwestern willow flycatcher. See, *Intra-Service Section 7 Consultation on Federal Participation in the Proposed Virgin River Resource Management and Recovery Program dated March 23, 2001*. The district plans to continue to work through the Virgin River Program. Given the success of the Virgin River Program, species benefits would likely be reduced by implementing the suggestions in this comment instead of continuing to work with the program.

**USFWS Comment 8:**

*(Threatened and Endangered Species)*

**Plants**

*The proposed and alternative routes cross through habitat for several sensitive plant species, including three listed species in Arizona and Utah; the threatened Siler pincushion cactus (*Pediocactus sileri*), the threatened Welsh's milkweed (*Asclepias welshii*), and the threatened Jones' cycladenia (*Cycladenia humilis* var. *jonesii*). Of these three species, critical habitat has been designated for Welsh's milkweed in Utah.*

*Additionally, the alternative route following Highway 389 across the Kaibab Band of Paiute Reservation will affect the only known population of Morton's wild buckwheat (*Eriogonum mortonianum*) in the Project area. Extensive surveys in the area found large populations of Siler's pincushion cactus and Morton's wild buckwheat along Highway 389. We are conducting a 12-month review on Morton's wild buckwheat in 2017 to determine if threats to the species warrant listing under the ESA.*

*We recommend the Project proponents work with our field offices (Arizona Ecological Services and Utah Ecological Services) to develop and implement measures to avoid direct and indirect impacts to listed and sensitive plants and critical habitat.*

**UDWRe Response:**

**The UDWRe will work with the Utah Ecological Services and Arizona Ecological Services field offices to develop and implement measures to avoid direct and indirect effects on listed and sensitive plants and designated critical habitat, where applicable.**

**USFWS Comment 9:**

*(Threatened and Endangered Species)*

**California condor (*Gymnogyps californianus*)**

*California condors in the Project area are an ESA Section 10G) non-essential experimental population. For future reference, your Project documents should indicated that Section 100) non-essential experimental populations on national wildlife refuges and lands administered by the National Park Service are considered a threatened species for purposes of compliance with ESA Section 7 and thus require a determination of effects to the species and any designated critical habitat. For California condor populations on other lands within the Project area, ESA Section 7 only requires a separate determination of jeopardy or non-jeopardy.*

**UDWRe Response:**

**The statement has been included in 3.3.1 California condor 3.3.1.1 Listing History and Status.**

**USFWS Comment 10:**

*(Threatened and Endangered Species)*

**Southwestern Willow Flycatcher (*Empidonax trailii extimus*)**

*We have very little information regarding southwestern willow flycatcher in the parts of Kanab Creek and the Paria River affected by project actions, but they are known to occur in other drainages in the area, including upper portions of Kanab Creek. We recommend the Proponents complete protocol level surveys by qualified biologists to determine the presence or absence of suitable habitat and potential nesting birds.*

*Construction and maintenance operations associated with the Project could result in temporary and permanent impacts to habitat, the loss of riparian vegetation, and noise disturbance to flycatchers. Pipeline placement methods would result in different degrees of impacts. For example, if the pipeline is being placed under the drainages using boring techniques, our main concern will be noise associated with boring during the species' breeding season. If the pipeline is being placed using trenching techniques, there is likely to be a greater direct loss of riparian habitat. In this case, we recommend that a complete habitat assessment be completed to provide a baseline for effects analyses and development of conservation measures.*

*Unavoidable permanent impacts to riparian habitats should be fully mitigated through the restoration of other similar habitats in nearby areas, at a minimum 3:1 ratio. In order to avoid disturbance with nesting birds, we recommend all construction activities in the vicinity of Kanab Creek and the Paria River be conducted outside of the breeding season for southwestern willow flycatcher (April 15 to September 15). The Project proponent should work with our office to identify other applicable conservation measures (i.e. minimal ground disturbance within suitable habitat, reduction in noise and light within suitable habitat, transmission lines built incorporating specific APLIC guidelines, etc.). All conservation and mitigation measures should be incorporated into the final document as applicant committed conservation measures. Even if flycatchers are not found during surveys, these same measures should be considered to offset Project effects to all other migratory bird species.*

#### **UDWRe Response:**

**Southwestern willow flycatcher surveys were performed by qualified biologists, as required, in the LPP Project study area. Prior to construction, UDWRe will perform all follow-up surveys, monitoring and evaluation protocols using qualified biologists to determine the presence or absence of suitable habitat and potential nesting birds.**

**The nine riparian areas encountered along the Proposed Action alignment were assessed for Proper Functioning Condition, of which three riparian areas (Paria River, Kanab Creek and Bitter Seeps Wash) were determined to be Functional – At Risk and consist primarily of tamarisk shrubs. The Paria River pipeline crossing would be parallel to and immediately upstream of the Highway 89 bridge, which carries a nearly continuous traffic load consisting of semi-trucks, large recreational vehicles, and passenger vehicles during the southwestern willow flycatcher breeding and nesting season. These baseline conditions consisting of nearly continuous human activity and noise likely contributed to the results of the field surveys performed at the Paria River, which found no nesting birds, transient migrants, or any evidence of southwestern willow flycatcher. Field surveys performed at Kanab Creek and Bitter Seeps Wash also resulted in no detection of nesting birds, transient migrants, or any evidence of southwestern willow flycatcher. The potential riparian habitat at these three crossing sites consists of tamarisk shrubs, and historical surveys have not recorded southwestern willow flycatcher at the three sites. Potential effects on transient and nesting birds have been analyzed and documented at the three Functional – At Risk riparian crossing sites. Appropriate conservation and**



mitigation measures have been determined and incorporated into Exhibit E and the preliminary draft biological assessment.

**Section 4.4.1.3.2 Operation and Maintenance Effects is revised to read:**

**Occasional maintenance at the Paria River crossing should be scheduled outside of the willow flycatcher breeding season. With this mitigation measure, operation and maintenance would not affect the southwestern willow flycatcher. Protocol surveys for the southwest willow flycatcher should be repeated at the Paria River crossing to determine if suitable develops and sustains habitat and becomes occupied by southwest willow flycatchers.**

**Chapter 5.4.1 Southwestern Willow Flycatcher is revised to read:**

- **Habitat areas determined to be unsuitable in 2009 would be evaluated for suitability based on presence of primary constituent elements. Protocol surveys would be conducted within suitable habitat prior to construction to document presence/absence of southern willow flycatcher**

**Chapter 5.4.2 Operation and Maintenance is revised to read:**

- **Occasional maintenance of the pipeline at the Paria River and riparian areas determined to be suitable should be scheduled outside of the willow flycatcher breeding and nesting season, generally May through July.**

#### **USFWS Comment 11:**

*(Threatened and Endangered Species)*

**Western Yellow-billed Cuckoo (*Coccyzus americanus*)**

*Construction and maintenance operations associated with the Project could result in temporary and permanent impacts to habitat, the loss of riparian vegetation, and noise disturbance to western yellow-billed cuckoos. As discussed above for flycatchers, pipeline placement methods in riparian areas also have different impacts based on the method used for pipeline placement across drainages. Aside from the areas that may be affected by human and earth disturbance due to construction, operation, and maintenance activities, the Project proponents should also identify riparian and adjacent upland areas that may be affected by changes in flow regime.*

*We recommend that you conduct protocol level surveys and habitat assessments for the western yellow-billed cuckoo in the Project action area. Suitable habitat should be identified using our Guidelines for the Identification of Suitable Habitat for Western Yellow-Billed Cuckoos in Utah (Service, 2015). Where suitable habitat exists, we recommend that you analyze how the proposed action, including modifications to flow regimes, may affect cuckoo and its habitat.*

*Surveys for the species should be conducted in accordance with A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo Final Draft (Haltermann et al., 2015).*

*Critical habitat for western yellow-billed cuckoo is proposed on the Virgin River (Critical Habitat Unit 68) upstream and downstream of Saint George in Washington County (79 FR 48548, August 15, 2014). You can find maps of proposed critical habitat here:*

*[http://www.fws.gov/sacramento/outreach/Public-Advisories/Western\\_Yellow-Billed\\_Cuckoo/outreach\\_PA\\_Western-Yellow-Billed-Cuckoo.htm](http://www.fws.gov/sacramento/outreach/Public-Advisories/Western_Yellow-Billed_Cuckoo/outreach_PA_Western-Yellow-Billed-Cuckoo.htm). A final determination is expected in 2016. In the event that proposed critical habitat is finalized on the Virgin River, we*

*recommend that you evaluate the effect of the proposed action on the physical and biological features, or primary constituent elements, of this critical habitat unit. Primary constituent elements for western yellow-billed cuckoo critical habitat include riparian woodlands, an adequate prey base, and dynamic riverine processes (79 FR 48550).*

**UDWRe Response:**

Surveys performed for western yellow-billed cuckoo presence or absence and suitable habitat in the LPP Project study area were conducted by qualified biologists. The surveys met the protocols as of 2009, and no western yellow-billed cuckoo were detected. Suitable habitat for western yellow-billed cuckoo was not observed within the three Functional – At Risk riparian areas and adjacent uplands along the pipeline alignment. The buried pipeline crossings of riparian areas and adjacent uplands would not permanently or temporarily affect flow regimes. Prior to construction, protocol level surveys for western yellow-billed cuckoo and suitable habitat would be performed by qualified biologists using the current Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo and Guidelines for the Identification of Suitable Habitat for Western Yellow-Billed Cuckoos in Utah. No direct construction disturbance would occur within or near proposed critical habitat for western yellow-billed cuckoo along the Virgin River in the St. George metropolitan area. The LPP Project water would flow into Sand Hollow Reservoir. From there, it would be used in the same manner as Virgin River water is used today. It would be treated to culinary standards and delivered to municipal customers. The LPP Project Proposed Action would have no direct and no measurable indirect effects on Virgin River flows, and there would be no effect on western yellow-billed cuckoo. Chapter 3.3.4.4 Proposed Critical Habitat includes the description of primary constituent elements of constituting yellow-billed cuckoo habitat and the location for the yellow-billed cuckoo and the proposed location for the yellow-billed cuckoo.

**Chapter 4.4.1.4.1 Construction Effects. Is revised to read :**

“Construction of the South Alternative would not materially change the potential foraging habitat or prey base for the yellow-billed cuckoo. Indirect effects of the South Alternative on the yellow-billed cuckoo would not be significant. South Alternative construction would not approach or cross proposed yellow-billed cuckoo critical habitat; there would be no effect on proposed yellow-billed cuckoo critical habitat.”

**USFWS Comment 12:**

*(Threatened and Endangered Species)*

**Mojave Desert Tortoise (*Gopherus agassizii*)**

*The PLP and DSRs identify that Mojave Desert Tortoise surveys for the Project were last completed in 2010. According to our protocol, desert tortoise surveys are only valid for one year. Thus, we recommend new active season surveys within a year before construction begins.*

*The Project is subject to Section 7 consultation, and is independent from the Washington County Desert Tortoise Habitat Conservation Plan (HCP). Though HCP staff may work with the Project proponents to provide biological information or assist with any necessary desert tortoise translocations, formal Section 7 consultation with us will be necessary. Depending on the results*

*of pre-construction surveys, compensatory mitigation may be appropriate if there is a loss of occupied desert tortoise habitat.*

*For example, the afterbay of the proposed hydroelectric pumped storage project at the base of the Hurricane Cliffs may constitute the permanent loss of occupied desert tortoise habitat (100+ acres) on land managed by the Bureau of Land Management (BLM). Further surveys will need to be conducted to adequately determine the impacts to the desert tortoise population in that area. Impacts from construction of the afterbay can be offset by compensatory mitigation developed in coordination with our office, or the afterbay may need to be moved to minimize impacts.*

**UDWRe Response:**

**In 1996, USFWS issued a Section 10(a)(1)(B) Incidental Take Permit for the Habitat Conservation Plan for Washington County, Utah (HCP). The HCP identified reserve lands, incidental take areas, potential habitat areas and exclusion areas. No incidental take of desert tortoises is allowed on reserve lands. All non-reserve State and private lands are included in the Section 10(a)(1)(B) Incidental Take Permit for the HCP (with the exception of Beaver Dam Slope which is outside of the APE) as incidental take areas, potential habitat areas or exclusion areas.**

**Incidental take areas are non-reserve State and private lands designated as desert tortoise habitat under the HCP. The incidental take process set forth in the HCP applies to these areas.**

**Potential habitat areas are non-reserve State and private lands where desert tortoise surveys and removals are required. Actions in these areas do not have to comply with the other requirements of the incidental take process.**

**Exclusion areas are all remaining non-reserve State and private lands, for which no surveys are required.**

**The incidental take permit provides for incidental take of Mojave desert tortoise on an estimated 350,000 acres of private and state school trust lands including all private and state school trust lands in Washington County outside of the reserve (and the Beaver Dam Slope area).**

**Of the 350,000 acres where take is permitted, 12,264 acres are managed in accordance with the incidental take process set forth below. The remaining acreage (approximately 338,000) has been released as incidental take, although any tortoise taken from that acreage applies against the established incidental take allowance.**

**The incidental take permit is a county-wide take permit for desert tortoises, so take may occur anywhere in the county outside the reserve (excluding the Beaver Dam Slope).**

**Any actions that federal agencies undertake on federal or Indian tribal lands that may affect the Mojave Desert Tortoise are subject to the Section 7 consultation process.**

**To the extent that Mojave Desert Tortoise and signs of MDT are found within incidental take area 10 or any private property in the area, take is covered by the incidental take**

**permit of the HCP. The sole impacts of the project on MDT would arise from impacts outside of this area, on federal lands.**

**USFWS Comment 13:**

*(Migratory Birds)*

*The PLP and DSRs state that Project proponents have not conducted migratory bird surveys for the Project. We recommend the Project proponent conduct surveys for migratory birds prior to ground-disturbing activities. We also recommend Project proponents implement seasonal buffers to reduce the project impacts to migratory birds (USFWS 2014).*

*While the PLP and DSRs note that Project proponents will follow the Avian Protection Plan jointly produced by the Edison Electrical Institute and USFWS, we recommend the Project proponents identify the specific measures they would incorporate into transmission line design to prevent electrocutions and collisions. We recommend travelers (equipment used to hold electric transmission lines to poles) not be placed until necessary to reduce the potential for migratory birds to nest in the equipment. We also recommend the Project proponents minimize the use of flat pads and vegetation clearing to reduce ground disturbance.*

**UDWRe Response:**

**UDWRe would perform migratory bird surveys prior to ground-disturbing activities along the LPP Project alignment. Seasonal buffers would be implemented as appropriate in the event active nests and roost sites are recorded during the migratory bird surveys. An Avian Protection Plan would be developed following the Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005) prior to construction.**

**Chapter 5.1 general Mitigation measures include:**

**An Avian Protection Plan should be developed following the Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005) prior to construction.**

**Chapter 4.4.2.2 Birds section 4.4.2.2.1 Construction Impacts. Is revised to read:**

**“Adult birds would not be at risk of direct mortality from construction of South Alternative features. Nests with eggs or nestlings could be destroyed by construction; construction corridors, including riparian zones, should be cleared of vegetation outside of the nesting season (typically March through July) thus preventing nesting prior to or during subsequent active construction. Raptor nests and roost sites should be surveyed and monitored and no construction activity should be performed within spatial and seasonal buffers contained in the Utah Raptor Guidelines (Romin and Muck 2002) one-quarter mile of occupied nests or roosts which includes a 0.5 mile buffer around the nests of most raptors species and one-mile buffer around bald eagle nests. A one-mile buffer is recommended for golden eagle nest. , including those of bald and golden eagles. Ground-nesting species, such as burrowing owl, long-billed curlew, western grasshopper sparrow, northern harrier, sagebrush sparrow and short-eared owl would be at risk from vehicles and construction equipment and construction should be scheduled outside of these species’ nesting periods and effects on sensitive birds and wildlife species of concern. These measures would ensure compliance conformance with the Migratory**

**Bird Treaty Act and Bald Eagle Protection Act and impacts on bird wildlife species of concern would be minimal and would not exceed the significance criteria.**

**Appropriate protection and mitigation of jurisdictional waters and wetlands and their associated habitats would be required under the applicable permitting procedures.”**

**BIA Comment 1:**

*The U.S. Bureau of Indian Affairs (BIA) has been working in conjunction with tribes potentially affected by the proposed Lake Powell Pipeline Project (Project) since the proceeding was established in 2007. The Project's potential effects on cultural resources important to the Kaibab Band of Paiute Indians (Tribe) have been of particular concern to us. We have supported the Tribe and participated in numerous meetings with the Utah Department of Water Resources (UDWR) and its partner water conservation districts over the years, attempting to negotiate a specific alignment for the Project and related terms and conditions that could potentially address effects on cultural resources.*

**UDWR Response:**

**Negotiating a specific alignment independently of the NEPA process would be contrary to that process.**

**BIA Comment 2:**

*It should be clear that each alternative poses substantial impacts to cultural resources important to the Tribe, the proposed action disproportionately so. We note here Tribal resolution K-30-12 stating the Tribe's preference for an alignment following State Highway 389 across the reservation. Although this alignment will have effects on cultural resources important to the Tribe, those effects are less severe and can likely be mitigated as described in the Lake Powell Pipeline EIS Avoidance vs. Mitigation Report prepared by the Southern Paiute Advisory Committee provided to UDWR and filed with the Federal Energy Regulatory Commission in 2012. Also included in that report are reasonable proposals to reduce impacts of the Proposed Alternative in areas south of the reservation. It is unfortunate that UDWR has neglected to include any of this information in its voluminous PLP.*

**UDWR Response:**

**UBWR received and reviewed the Kaibab Band of Paiute Indians' Lake Powell Pipeline Avoidance and Mitigation Report. Information contained therein does not address many items being considered in the NEPA process. Negotiating a specific alignment and creating mitigation strategies independent of the NEPA process would be contrary to that process.**

**BIA Comment 3:**

*Throughout this process we have availed ourselves of the Tribe's special expertise in this area, including numerous annual contracts with the Tribe through Public Law 93-638. As such, we incorporate the Tribes February 29, 2016, comments here by reference.*



**UDWRe Response:**

**Your comment has been noted.**

**BIA Comment 4:**

*Although the Preliminary Licensing Proposal (PLP) is overly verbose and outdated in many sections, these concerns can likely be addressed by the Federal Energy Regulatory Commission (FERC) through development of an Environmental Impact Statement. However, the PLP neither addresses measures recommended by the Tribe nor identifies any potential protection or mitigation measures that could be used to alleviate its concerns. Section 5.3.19 simply states that protection and mitigation measures will be identified in the Historic Properties Management Plan. As we are not specifically involved in the development of that plan, we request that all measures needed to mitigate Project effects on cultural resources important to the Tribe be identified in FERC's EIS and included in specific license articles to the maximum extent possible. The paucity of information in the PLP on this issue should be addressed by UDWR in its final licensing proposal - as should comments filed by the Tribe on each of UDWR's study reports.*

**UDWRe Response:**

**The Historic Properties Treatment Plan (HPTP) that will be prepared for the DOI agencies and meets FERC's requirements for a draft Historic Properties Management Plan (HPMP) is a confidential document specifically addressing mitigation measures for cultural resource sites determined eligible for listing in the National Register of Historic Places (NRHP) and important to multiple Native American tribes. Confidential information about specific cultural resource sites important to the tribes is purposely not made public in the PLP or Exhibit E to protect the integrity and location of sites and any associated artifacts. When the Class III Report (also a confidential document) is completed and sites determined eligible by the FERC and BLM are concurred with by the Utah and Arizona State Historic Preservation Officers (SHPOs), then the HPTP will be prepared to address specific mitigation measures for each identified eligible site. The HPTP will be prepared in consultation with the federal land management agencies, SHPOs, cooperating agencies, Native American tribes, and the Advisory Council on Historic Preservation, and when completed and concurred with by the Utah and Arizona SHPOs, will be incorporated into the FERC EIS.**

**BIA Comment 5:**

*UDWR did not provide a concise articulation of the differences between its proposed alternatives. As such, we were unable to determine why the southern alignment was selected over the reservation route as its Preferred Alternative. The reservation route is not only shorter (and, therefore, likely less expensive), it leaves unmolested those landscapes of considerable importance to the Tribe. A rationale for this decision should be included in the PLP such that we can more fully evaluate and better understand UDWR's conclusions. Based on the information provided in the PLP, we see no justification for UDWR's Preferred Alternative over the reservation alignment and are therefore not in a position to support this action.*

**UDWRe Response:**

**UDWRe's preference for the proposed route is discussed in Section 3.1 of Exhibit E.**

#### **BIA Comment 6:**

*In summary, we are currently not in a position to support construction of the pipeline given its likely effects on significant cultural resources, the lack of information necessary to both justify its potential effects on cultural resources and to assess potential protection and mitigation measures, or a rationale over why a more expensive more impacting alternative would be selected when other alternatives are viable. We also request that UDWR specifically address previous comments made by the Tribe on its study reports and include construction, operation and maintenance costs associated with each alternative in its final application. Additional specific comments on cultural resources will be provided under a separate filing.*

#### **UDWR Response:**

**Previous comments from the Kaibab Band of Paiute Indians are being addressed in the final study reports filed with this license application.**

#### **CO RIV-NEV Comment 1:**

*Since the LPPP will transfer additional water to St. George, Utah, it may result in increased discharges to the Virgin River and Lake Mead if the transferred water is not fully consumed. If there are discharges, there may be unintended impacts to water quality and other aquatic resources. Potential impacts on stream water quality in the Virgin River were eliminated from BLM River Daily Simulation Model indicated that return flows “would be within the measurement accuracy of the [U.S. Geological Survey] gages on the Virgin River and changes in river flows would not be measurable” (Draft Study Report 17, p. 4-13 and 4-14). It is unclear how a USGS gage that measures stream flow could capture changes to water quality. Moreover, it is unclear how this statement is reconciled with other statements such as in the PLP that indicate that a substantial proportion of outdoor water use returns to the Virgin River (see Draft Study Report 18, p. 3-34 and PLP, p. 5-131, “33 percent [sic of outdoor water use], returned to the Virgin River as non-sewered return flow”). It stands to reason that a portion of the transferred water that is applied outdoors could result in an increase in the non-sewered return flows to the Virgin River. We suggest revisiting the assumptions and analyses for this topic to provide more certainty of the conclusions presented.*

#### **UDWR Response:**

**The LPP Project water, minus evaporation from Sand Hollow Reservoir and groundwater recharge into the Navajo sandstone aquifer underlying Sand Hollow Reservoir, would be fully consumed as M&I water. The VRDSM results comparing No Action (future without the LPP Project) and the Proposed Action (future with the LPP Project) demonstrate the Virgin River flows at each of the model nodes, including several coinciding with USGS gages, would not be measurably different. These results are clearly demonstrated by the flow duration curves based on 72 years of daily stream flow data for the No Action and Proposed Action, which are superimposed on each other. Several of the USGS gages in the St. George metropolitan area have water quality data reported in the available records.**

**The volume of reuse water produced by the St. George Regional Water Reclamation Facility would increase and be used to water golf courses, schools, parks, and farms, decreasing the wastewater effluent discharges to the Virgin River. The proportion of reuse water being used for secondary watering would increase as the population grows, along**

with culinary water used for outdoor watering. The estimated non-sewered return flows to the Virgin River from the reuse water application at golf courses, schools, parks and farms at full utilization of the LPP Project water would comprise approximately 11 percent of the total return flow to the Virgin River.

The residual BOD and nutrients in the reuse water applied for outdoor watering would be consumed by plants and be adsorbed by soils. The TDS concentration in the estimated non-sewered reuse return flow to the Virgin River would be similar to baseline conditions in the river, which is downstream of the high TDS concentration and load contributed by Pah Tempe Springs. The remaining portion of the non-sewered outdoor water use return flow to the Virgin River (approximately 15 percent of the total return flow to the Virgin River) would be comprised of culinary water with lower TDS concentrations and used for outdoor watering, reflecting the lower TDS water conveyed to Sand Hollow Reservoir from the LPP Project.

From Final Study Report 18 (Surface Water Resources):

Of the 27,709 acre-feet of outdoor water use in 2010, UDWR estimated that 50 percent returned to the Virgin River as non-sewered return flow (UDWR 2014). UDWR estimates that the non-sewered return flow to the Virgin River would decrease to 30 percent of the total outdoor water use by 2050 resulting from less culinary water use for outdoor watering on a per capita basis as part of ongoing water conservation initiatives. Table 3-3 summarizes water use and return flow estimates for 2010 for communities that would receive M&I water from the LPP Project.

<b>Table 3-3</b> <b>2010 Water Use and Return Flow Summary for Major LPP Water Users (AF)</b>						
<b>Water Supplier</b>	<b>Total Water Use</b>	<b>Outdoor Water Use</b>	<b>Non-Sewered Return Flow</b>	<b>Indoor Water Use</b>	<b>Wastewater Treatment Inflow</b>	<b>Sewered Return Flow</b>
Ivins	1,521.3	914.2	457.1	607.1	523.5	513
Santa Clara Municipal	1,579.2	980	490	599.2	548	537
St. George City	30,140.6	16,725	8,362	13,416	11,710	11,258
Washington Municipal	6,590.7	4,188	2093.9	2,403	2,097	2,055
<b>Total St. George WWTP</b>					<b>14,878</b>	<b>14,363</b>
Toquerville	489.5	385.4	192.7	104.1	96.1	94.2
Hurricane	5,181.3	3,440	1720	1,741	1,559	1,528
LaVerkin	775.0	446.1	223.1	328.9	306.2	300.1

<b>Total Ash Creek WWTP</b>						<b>1,961</b>	<b>1,922</b>
Kanab	1,440.6	871.2	435.6	569.4		533.9	263.2
Source: UDWR 2014							
<b>Additional analysis of the projected future water quality in the Virgin River at full utilization of the LPP Project water has been included in Final Study Report 17, Surface Water Quality.</b>							

**CO RIV-NEV Comment 2:**

*Lake Mead infestations of quagga mussels have increased maintenance costs of waters users with pumps in Lake Mead, at the dams on the Colorado River, and in the river below Lake Mead. The LPPP proposes to prevent the introduction of quagga mussels to Sand Hollow Reservoir and Quail Creek Reservoir by using a molluscicide and filtering mechanisms (PLP, p. 5-252). Our experience has been that the proposed molluscicide (i.e., Zequinox) does not have a 100% kill rate and filtering is not 100% effective. According to the LPPP PLP, there is a pipe that connects Quail Creek Reservoir, which is one of the final reservoirs to store water from the project, to the Virgin River (Draft Study Report 18, November, 2015, Figure 3-12 and LPPP Develop and Analyze Alternatives, MWH, page 5.13C-2). Logistically, if there was an unintended discharge, quagga mussels could enter the Virgin River from Quail Creek Reservoir. The impact of a quagga mussel infestation on water quality, aquatic resources and agriculture in the Virgin River should be analyzed. It is not unreasonable to conclude that quagga mussels could colonize appurtenant water delivery infrastructure and potentially the Virgin River. We suggest revisiting the assumptions and analyses for this topic to provide more certainty of the conclusions presented.*

**UDWRe Response:**

**Please see the responses to NPS Comment 2 and NPS Comment 12 regarding the Aquatic Invasive Species Control and Monitoring Plan. Control of Dreissena species at all life stages in the Water Intake System would be accomplished through the use of the most up-to-date, selective and environmentally compatible treatment available when the LPP Project is designed.**

**CO RIV-NEV Comment 3:**

*Release(s) [sic] from Lake Powell to Lake Mead are determined by the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. It would be beneficial to present Lake Mead water-level elevations in the same manner as the Lake Powell results displayed in Section 5.3.3.2.3 since the CRSS model used for these results already includes both reservoirs.*

**UDWRe Response:**

**This request is outside of the FERC-approved study plan.**

**CO RIV-NEV Comment 4:**

*Appropriate water accounting methodologies need to be determined by the Bureau of Reclamation, in conjunction with the Seven Basin States prior to the development of the LPPP.*

**UDWRe Response:**

**Bureau of Reclamation studies are referenced throughout the study reports.**

**Kaibab Tribe Comment 1:**

*The UBWR filed the PLP as required under the Integrated Licensing Process ("ILP"). See 18 C.F.R. § 5.16. The Commission's regulations governing the ILP require the PLP to:*

- (1) Clearly describe, as applicable, the existing and proposed project facilities, including project lands and waters;*
- (2) Clearly describe, as applicable, the existing and proposed project operation and maintenance plan, to include measures for protection, mitigation, and enhancement measures with respect to each resource affected by the project proposal; and*
- (3) Include the potential applicant's draft environmental analysis by resource area of the continuing and incremental impacts, if any, of its preliminary licensing proposal, including the results of its studies conducted under the approved study plan.*

*Id. § 5.16(b).*

*The Kaibab Tribe begins with some general comments on the PLP and revised draft study reports filed by the UBWR, and is compelled to repeat some of the general comments it previously submitted regarding earlier draft study reports because the PLP does not address the earlier comments or explain the failure to address them. See 2012 Comments at 1-2; 2011 Comments at 1-3.*

*First, the UBWR states that it intends to update most of the revised draft study reports with pending modeling results and other data and information, PLP at P-1 to -2, including additional information and data for many of the reports regarding impact analyses, protection, mitigation, and enhancement measures, cumulative impacts, and unavoidable adverse impacts, id. at P-1, so at this time the revised draft study reports, and the PLP that is based on and draws conclusions from those reports, remain incomplete and inadequate in important areas. The Tribe requests that the Commission remand the PLP and revised draft study reports to the UBWR for further updates and completion, and the Kaibab Tribe must have an opportunity to provide comments on all of the updated draft study reports before they are deemed final.*

**UDWRe Response:**

**UDWRe has received the modeling results from the Bureau of Reclamation and has incorporated those results into the final study reports as applicable. The license application filed with FERC will be available on FERC's eLibrary, and comments on the filed license application, including the final study reports, may be filed with FERC. When FERC determines that the project is ready for environmental analysis, it will issue a notice to that effect.**

**Kaibab Tribe Comment 2:**



*Second, the PLP and revised draft study reports generally ignore and inadequately address the Kaibab Tribe's oft-repeated concerns regarding potential impacts to TCPs in the area of potential effect. For the tribal consultation and public comment processes to be meaningful, the UBRW must show that it actually considered the Kaibab Tribe's express concerns, and as currently written, both the PLP and revised draft study reports are woefully lacking in this regard. To address the Kaibab Tribe's concerns about impacts to TCPs and thereby comply with federal law, the Kaibab Tribe requests that the Commission remand the PLP and revised draft study reports to the UBRW for further revisions and analysis.*

*Similarly, the PLP and revised draft study reports do not reflect any meaningful consideration of most of the Kaibab Tribe's other comments. See 2012 Comments at 2. The lack of substantive changes to any of the draft study reports in response to the Kaibab Tribe's previous comments demonstrates that the UBRW largely ignored tribal concerns. While talking to and allowing public comments from Indian tribes is a necessary component of tribal consultation, the failure to make a meaningful attempt (or any attempt at all) to address the Kaibab Tribe's concerns renders any consultation activities meaningless and noncompliant with federal law. The Kaibab Tribe incorporates its prior comments herein, and again asks the Commission to remand the PLP and revised draft study reports to the UBRW for further revision consistent with the Kaibab Tribe's significant concerns.*

#### **UDWRe Response:**

**The UDWRe acknowledges the Kaibab Tribe's comments on TCPs. The proposed TCPs will be discussed in the ethnographic resources study report, which is confidential and has restricted distribution, and will continue to be updated as the Class III Report is completed and reviewed for concurrence by the SHPOs. Additionally, UDWRe and its consultants will be informally meeting with each involved Native American tribe to discuss proposed TCPs, sacred sites and cultural landscapes and obtain each tribe's views of NRHP eligible sites and potential mitigation measures. This information will be considered in the draft Historic Properties Treatment Plan (HPTP) document prepared on the Class III Report and the ethnographic resources study report (all considered confidential documents). Applicable analyses about noise, air quality and visual resources impacts on proposed TCPs, sacred sites and cultural landscapes within the ethnographic resources APE will be included in the ethnographic resources report, and potential mitigation measures for each site will be included in the HPTP document.**

#### **Kaibab Tribe Comment 3:**

*Third, the PLP and most of the revised draft study reports fail to document any effort by the UBRW to engage in the type of meaningful consultation with the Kaibab Tribe that would enable it to learn about, understand, and address the Kaibab Tribe's important concerns. See 2012 Comments at 2; 2011 Comments at 2. The Commission designated the UBRW as its non-federal representative in this matter, Letter from Ann F. Miles, Director, Div. of Hydropower Licensing, Fed. Energy Regulatory Comm'n, to Selma Sierra, Utah State Director, Bureau of Land Mgmt., at 4 (Mar. 22, 2010), so the UBRW must comply with the same federal requirements to consult with the Kaibab Tribe that apply to the Commission. See 2011 Comments at 2; see also 18 C.F.R. §§ 2.1c (Commission's "Policy Statement on consultation with Indian Tribes in Commission proceedings"), 5.18(b)(3)(v) (requiring license applicant to document consultation with affected Indian tribes). Consistent with federal law, the Study Plan approved by the Commission requires*

*the UBWR to consult with Indian tribes. See 2011 Comments at 2. Since a majority of the revised draft study reports remain silent or do not provide sufficient details about the efforts made to consult with the Kaibab Tribe, the Commission should remand the PLP and revised draft study reports to the UBWR for further revisions that demonstrate compliance with tribal consultation requirements.*

**UDWRe Response:**

The UDWRe and its consultants (agents for the UBWR) have informally consulted with the Kaibab Tribe numerous times throughout the preparation of the study reports and period leading up to filing the license application. The Kaibab Tribe environmental coordinator was contacted by nearly every resource specialist to provide resource data and policy information from the Tribe's files, and to provide permission to perform studies on the Kaibab-Paiute Indian Reservation. UDWRe and its consultants received permission from the Kaibab Tribe environmental coordinator to perform field studies on the Kaibab-Paiute Indian Reservation, and UDWRe paid tribal member monitors to accompany each field team whenever they were performing studies on the Kaibab-Paiute Indian Reservation. UDWRe and its consultants were requested to make presentations to the Tribal Chair, Tribal Council, and Kaibab Tribe members on the data and information collected on the Kaibab-Paiute Indian Reservation, and these presentations were made on the reservation for all the requested studies. Additionally, UDWRe has met with the Kaibab Tribe on the Kaibab-Paiute Indian Reservation, as well as off the reservation, numerous times to discuss the LPP Project and the Kaibab Tribe's important concerns. The information obtained by UDWRe during each informal consultation with the Kaibab Tribe has been considered and included as applicable in preparing the study reports and the license application. The UDWRe cannot formally consult with the Kaibab Tribe about the LPP Project because government-to-government consultations can only be performed by a line officer or manager with a federal agency. For the BLM's government-to-government consultation with the Kaibab Tribe, the UDWRe understands that manager of the Grand Staircase-Escalante National Monument has been designated the responsible manager/line officer for performing formal consultations.

**Kaibab Tribe Comment 4:**

*Fourth, the UBWR's analysis and consideration of the Existing Highway Alternative in the PLP and the revised draft study reports is inadequate. For this alternative, the UBWR must consider that the Kaibab Tribe has already granted permission for the pipeline to cross tribal lands, RESOLUTION OF IBE GOVERNING BODY OF THE KAIBAB BAND OF PAIUTE INDIANS, No. K-30-12 (May 17, 2012), and also take into account the Existing Highway Alternative's potential benefits to the Kaibab Tribe. See Letter from Cynthia Staszak, Grand Staircase-Escalante Nat'l Monument Manager, Bureau of Land Mgmt., to Fed. Energy Regulatory Comm'n, at 2 (Feb.25, 2016). The UBWR fails in this regard.*

**UDWRe Response:**

**UDWRe's preference for the proposed route is discussed in Chapter 3 of Exhibit E.**

**LPP Coalition Comment 1:**

*Pursuant to 18 C.F.R. §5.16, the Lake Powell Pipeline Coalition (“the Coalition”) hereby comments on the Utah Board of Water Resources’ Division of Water Resources’ (“UBWR”) Preliminary Licensing Proposal (“PLP”) and revised draft study reports for the Lake Powell Pipeline Project (“Project”), eLibrary no. 20151202-0046 (Dec. 1, 2015).*

*The Coalition consists of: Citizens for Dixie's Future, Glen Canyon Institute, Grand Canyon Wildlands Council, Living Rivers - Colorado Riverkeeper, Utah Chapter Sierra Club, Grand Canyon Chapter Sierra Club, Save The Colorado and Utah Rivers Council. The descriptions and interests of member groups are stated in our Scoping Document (SD1) Comments.<sup>1</sup>*

*These comments raise concerns related to the adequacy of the information included in the PLP, including the Study Reports, to serve as the basis for the Federal Energy Regulatory Commission’s (FERC or Commission’s) environmental review under the National Environmental Policy Act (NEPA) and ultimate licensing decision under the Federal Power Act (FPA).*

*Based on our review of the PLP, the Coalition is concerned that the Project as proposed is legally and hydrologically infeasible. For example, the PLP does not adequately address the following issues:*

- *Whether the Project is needed to meet existing or forecasted demand;*
- *Whether UBWR has sufficient water rights under the Law of the River to effectively operate the Project over the term of license. Utah’s Colorado River Compact rights are only a percentage of water left after senior water rights of the Lower Basin Compact obligations have been met.*
- *Whether the proposal to divert water from Lake Powell is in accordance with the Law of the River. According to the Colorado River Compact Utah’s Upper Basin water rights cannot be used in the Lower Basin where the Project is located.*
- *Whether, and if so to what extent, reasonably foreseeable climate change scenarios will limit the availability of water for Project uses. UBWR incorrectly claims that it can divert water in dire conditions, and that, therefore, it does not have a responsibility to address the risk of climate change.*
- *Whether UBWR has sufficient resources to construct, operate, and maintain a project of this scale for the term of any new license.*

<sup>1</sup> e-Library no. 20080707-5206 (July 7, 2008)

#### **UDWRe Response:**

**The LPP is needed to meet the forecasted need for water beginning in 2025. Please see the Water Needs Assessment for further information. The state of Utah holds a water right under which water will be delivered through the project, and is in accordance with “The Law of the River.”**

**The BOR included climate change projections in their modeling, and has concluded that there is minimal risk.**

#### **LPP Coalition Comment 2:**

*According to the Commission’s regulations, a preliminary licensing proposal must:*

- (1) Clearly describe, as applicable, the existing and proposed project facilities, including project lands and waters;
- (2) Clearly describe, as applicable, the existing and proposed project operation and maintenance plan, to include measures for protection, mitigation, and enhancement measures with respect to each resource affected by the project proposal; and
- (3) Include the potential applicant's draft environmental analysis by resource area of the continuing and incremental impacts, if any, of its preliminary licensing proposal, including the results of its studies conducted under the approved study plan.<sup>2</sup>

*We are concerned the PLP is incomplete, includes major errors, and includes many unsubstantiated claims that do not comply with these requirements, as described below.*

<sup>2</sup> 18 C.F.R. § 5.16(b)

**UDWRe Response:**

**Your comment is noted.**

**LPP Coalition Comment 3:**

**The PLP Does Not Provide Complete Information on Project Facilities and Operation**

*The PLP does not provide information on the impact of low reservoir levels on power production and its implications if UBWR cannot operate the Project in drought or other low-inflow conditions.*

*The PLP also lacks information on capacity and generation of power from the pump storage project and the estimated power that would be needed for pumping from Lake Powell and what this power production will cost.*

*The PLP does not include the timing for completion of transmission upgrades to provide power to the pumps and for upgrades required to the Glen Canyon switchyard. Further, how much will local utility rates have to be raised to pay for the required transmission improvements for the Project? For example, Page Electric's cost in 2009 was estimated to be seven million dollars and Garkane Power's cost was 40 million dollars.*

**UDWRe Response:**

**The FERC-approved study plan requires UBWR to assess the impacts of the project on Lake Powell and power production but does not require UBWR to assess the inputs of low lake levels on power production. The likelihood of Lake Powell declining to the power pool level is minimal.**

**LPP Coalition Comment 4:**

**The PLP Does Not Address the Cumulative Effects of the Project and Climate Change on the Affected Environment**

*The PLP does not accurately characterize the cumulative impacts of climate change on the Project and on the affected environment over the term of the license. Contrary to the approved Study Plan, all the models used by UBWR do not consider climate impacts on water availability for the Project. UBWR used the Colorado River Simulation System (CRSS) flow model for the*

*analysis of climate change on the Project, which is unaffected by climate change. UBWR used the Direct Natural Flow, Index Sequential Model (DNF) that does not consider climate change. Also, UBWR used the Climate Change Inflow Hydrology (CC) model that held Upper Basin depletions to 2015 levels. Further, UBWR did not apply the results of the best available science information from a Downscaled General Circulation Model (GCM), which is a climate model to analyze water availability for the Project. In particular, the PLP does not describe the extent to which predicted increases in temperature will lead to increased evaporation of water stored in Lake Powell.*

*More importantly, UBWR must prove it can divert water in drought and other low-flow conditions. As the flow of the Colorado River diminishes UBWR's junior water rights will subordinate to the rights of senior water rights holders. If a drier climate is considered the cumulative effects of the Project will be different in the analysis of the affected environment. We explain the reasons in greater detail in our comments in Study Report No. 19 Climate Change below.*

**UDWRe Response:**

**The CRSS model used both the DNF datasets and the CC datasets to analyze storage effects on Lake Powell and Colorado River streamflow effects. The CC datasets were developed using downscaled GCM model output. Both action and no action model runs have depletions held at 2015 levels and each were run with CC datasets as well as DNF datasets. The text in Study Report No. 19 Climate Change clearly states that “that these model results do not represent what the actual reservoir elevations or releases will be in any particular year. Model results should be interpreted based on the relative differences between the action and no action alternatives.” Relative differences are also compared for the action alternative between CC hydrology datasets and DNF hydrology datasets to evaluate the variability of the effects with respect to climate change in Study Report 18 Surface Water Resources. Use of this model was never intended to predict future storage but rather to compare with and without project impacts under possible future hydrologies.**

**LPP Coalition Comment 5:**

***The PLP Does Not Provide Adequate Environmental Analysis of the Environmental Impacts of the Project and Alternatives***

*UBWR's claim that it can always divert water at the end of river system is unsubstantiated. Therefore, UBWR cannot assure an adequate environmental analysis of the impacts of the Project. The PLP must consider the probability of reduced flows of the Colorado River over the term of the license, but it does not. We address this issue in more detail below in our comments on Study Report No. 19 Climate Change below.*

**UDWRe Response:**

**The LPP Project diversions under Reclamation's CRSS modeling with climate change inflow hydrology would result in reservoir levels during the period from 2024 through 2060 that are well within the monthly, seasonal and annual changes of the normal operation of Lake Powell. The LPP Project changes in reservoir levels would have no effect on ongoing management activities in Grand Canyon National Park and an unmeasurable effect on ongoing management activities at GCNRA. The ongoing Reclamation management actions involving Lake Powell referenced in the comment, which comprise interrelated actions with**



the LPP Project, are evaluated in Exhibit E in terms of reservoir level changes that could influence decisions on water management through Glen Canyon Dam operations.

**LPP Coalition Comment 6:**

**Analysis of Dust Suppression Water Demand for Construction of the Project**

*In the Project's geology and soils resources study, it describes 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 excavation of soils to lay the pipeline in the ground. It is more than the cement used to build Hoover Dam. For example, the US Bureau of Reclamation described that 4.5 million cubic yards of concrete was used to build Hoover Dam. The excavated volumes from trenches and tunnels needed to build the Project of 6 million cubic yard is expected to be more than the total volume of concrete used to build Hoover Dam or the Panama Canal (500,000 cubic yards).<sup>137</sup>*

**Figure 17. Study Report 4, Table 3-14**

	<u>South Alignment</u>	<u>Highway Alignment</u>	<u>Southeast Corner</u>
Total Excavated Volume from trenches and tunnels (cubic yards)	6,084,996	6,144,985	5,575,108

*Consequently water for dust suppression and where it will come from is an issue that needs to be in the Study Report. The Project calls for the deep excavation and installation of an underground pipeline to convey the water over hundreds of miles to southwest Utah. The construction activities related to excavation and pipeline installation will take place in a hot dry climate and is therefore likely to generate significant amounts of dust that will (unless mitigated) adversely impact air quality. The traditional method for dust suppression for large-scale projects such as this would be watering. The PLP does not provide adequate information regarding the levels of dust generated by the construction phase of the Project, the impacts of such dust on air quality, the amount of water needed to properly mitigate/avoid these dust-related impacts, the source of such water for dust suppression (e.g., identification of groundwater and surface water supplies), and the impacts on such sources of pumping/diversion. Similarly, the Study Reports do not collect and analyze information related to dust suppression water demands for the construction phase of the Project. Without this information, the EIS will not be able to evaluate the environmental effects of the dust suppression water demand or propose appropriate alternatives and/or mitigation to reduce/avoid such effects.*

<sup>137</sup> See at: <http://www.usbr.gov/lc/hooverdam/educate/kidfacts.html>

**UDWRe Response:**

**Several sections within both the PLP and Study Report address fugitive dust calculations during construction, likely impact areas from this dust generation and dust suppression efforts needed for mitigation. Water is not the only method of dust suppression and**

alternative suppression methods can be used as approved. Sources of water for dust suppression will be considered by the contractor(s) in comparison to other dust suppression methods.

Construction of the pipeline and facilities will proceed in segments, with small sections of trench excavated/blasted for construction, pipeline installed, and trench backfilled. Long reaches of open trench with large piles of stockpiled soil will not be allowed, so construction-generated dust would be limited to the vicinity of active construction.

Section 2.2 of the Revised Draft Groundwater Resources Study Report includes the following assumption:

Temporary groundwater production wells would be constructed in five-mile intervals if needed along all LPP Project alignments to provide water for construction activities. Aquifer conditions would be suitable for production at these intervals. These wells would be used for brief, temporary periods, generally no more than 30 days in most instances, and would be pumped at rates that would not result in substantial or long-term impacts on other groundwater users. The wells would be abandoned in accordance with state law after they were no longer needed, protecting against the possibility of subsequent contamination of groundwater quality. The water will be used for dust control on roads and along the pipeline to obtain proper moisture conditions for compaction.

Impacts on air quality from excavation and blasting are addressed in the Air Quality Resource Study Report. No change to the text is needed.

#### LPP Coalition Comment 7:

**Analysis of Resulting Development in Washington Co. and Kane Co.**

*As noted above, the primary purpose of the Project is to provide additional water supplies to support future expansion of residential and commercial development in Washington County and Kane County in the State of Utah. NEPA requires the environmental assessment of all foreseeable direct and indirect effects resulting from a project. In this instance, the resulting residential and commercial development in Washington and Kane Counties would be direct and/or indirect effects of the construction and operation of the Project. As such, the NEPA evaluation would need to include an assessment of the environmental effects of such development (such as conversion/loss of agricultural/undeveloped lands, traffic and related air quality impacts, and GHG emission increases). The scope of the Study Report does not include assessment of these direct/indirect effects.*

#### UDWRe Response:

**Refer to the response to USFWS Comment 1 in the General Comments section.**

#### LPP Coalition Comment 8

**Summary**

*We ask the Commission Staff to require UBWR to implement Study Plan No.19 goals and objectives, and tasks listed in the approved plan detailed in our comments. We also ask the Commission to require UBWR to implement other study plan requirements omitted from the Study Reports listed in our comments. We seriously question the viability of this project and if it can be*

*considered as a permanent water project residents can rely on. The requested information is of high importance because it influences communities' decisions to build a billion dollar project. We request that Commission Staff modify the Study Reports consistent with our recommendations to assure the accuracy of the information in the licensing record.*

**UDWRe Response:**

**FERC-approved a study plan based on input from all interested entities, including the coalition. UDWRe has implemented the study plans approved by FERC.**

**LPP Coalition Comment 9:**

**Conclusion**

*Based on our review of PLP and Revised Study Reports, it does not appear that the UBWR has complied with the regulatory requirements for a preliminary licensing proposal or the requirements of the approved Study Plans. The Coalition found in several instances that UBWR did not adequately report vital environmental information required under the approved Study Plans. In some cases critical data was misinterpreted in the PLP, while in others it was completely omitted. We request that the Commission staff require UBWR to correct studies that have not been conducted in accordance with the approved Study Plans.*

**UDWRe Response:**

**The Final Study Reports and Exhibit E have been prepared to provide the information and analyses in accordance with the approved study plans.**

**Western Resource Advocates Comment 1:**

*Western Resource Advocates is a nonprofit conservation organization dedicated to protecting the Interior West's land, air, and water. We promote river restoration and water conservation, advocate for a clean and sustainable energy future, and protect public lands for present and future generations. Western Resource Advocates engages with utilities, state and federal government agencies, and irrigators to find solutions to meet growing urban water demands while protecting stream flows for fish, wildlife, and recreation.*

*FERC should require that the applicants revise the PLP to include a realistic No Action Alternative that properly accounts for current and future water demands, reasonable water conservation, aggressive reuse, and more agricultural water transfers. In addition, the PLP should be revised to include Arizona's Water Export Statute, A.R.S. § 45-292, as one of the required permit approvals for the LPP. Finally, because FERC does not have jurisdiction over the water supply pipeline itself, FERC and the other permitting agencies should appoint a more appropriate agency as the lead agency for developing an environmental impact statement under NEPA.*

**UDWRe Response:**

**The No Action Alternative is clarified in Exhibit E, Section 3.2. UDWRe will obtain all necessary federal and state permits for the project. Also refer to the response to Western Resource Advocates Comment 2 in the General Comments section. WRA's comments regarding the lead agency for NEPA compliance are an expression of opinion.**

## Western Resource Advocates Comment 2:

### **The PLP Fails to List Arizona's Water Export Statute, A.R.S. § 45-292, Among the Required State Permits for the LPP**

*The Arizona Water Export Statute expressly prohibits transporting water from Arizona for consumptive use in another state without approval by the Director of the Arizona Department of Water Resources.<sup>39</sup> In the proposed LPP, the Utah Division of Water Resources plans to pump stored water from Lake Powell at a point in Arizona and transport that water via pipeline for consumptive use in Utah. Therefore, the plain terms of the Arizona Water Export Statute apply to the current plans for the Lake Powell Pipeline. However, there is no mention of A.R.S. § 45-292 in the relevant section of the PLP.<sup>40</sup> Under A.R.S. § 45-292, the Director must hold a formal administrative hearing on the application and consider statutory factors in determining whether to grant, condition, or deny the application to move water out of Arizona.<sup>41</sup> The PLP should be revised to include this state statutory permit requirement.*

<sup>39</sup> A.R.S. § 45-292, attached as Exhibit 4; see also *id.* at 45-101(3) (defining the “director” as the Director of the Arizona Department of Water Resources).

<sup>40</sup> See PLP at 2-5 to -6 (Table 2-1).

<sup>41</sup> Article IX(a) of the Upper Colorado River Basin Compact (UCRBC) does not preempt Arizona's ability to reject an application for the Lake Powell Pipeline. Both Arizona and Utah are signatories to the UCRBC. Article IX(a) only protects the consumptive interstate water projects of a “lower,” i.e. downstream, signatory state against the protectionist laws of an “upper,” i.e. upstream, signatory state. The Colorado River never re-enters Utah below Lake Powell in Arizona. Therefore, the proposed Lake Powell Pipeline is not protected by Article IX(a) of the UCRBC.

## UDWRe Response:

**Arizona has been made aware of the proposed project, and will be coordinated with throughout this process; however, the Upper Colorado River Compact, of which Arizona is a signatory, requires all participants to facilitate use of a state's own allocation.**

## Western Resource Advocates Comment 3:

### **FERC's Limited Jurisdiction Over Only the Hydropower Components Demonstrates That FERC is Not the Proper Lead Agency for this Water Supply Project**

*As FERC recently acknowledged, it has jurisdiction over the discrete hydropower components of the Lake Powell Pipeline, but not the Pipeline itself. In Wyco Power & Water, Inc., 139 FERC ¶ 61,124 at pp. 4-5 (May 17, 2012 Order), FERC cites the Lake Powell Pipeline in rejecting Wyco's arguments that FERC has jurisdiction over entire water supply pipeline projects. Yet most of the concern and controversy surrounding the LPP concerns the pipeline's potential location, the applicants' water supply and demand analyses, the potential impacts to the Colorado River, and other issues related to water supply management.*

*The applicants concede that the LPP will be built primarily as a water supply pipeline and that the hydropower components' purpose is to “help offset” the pipeline's energy demands.<sup>42</sup> It follows that selection of a non-pipeline alternative would likely obviate the applicants' claimed need for the hydropower facilities considered in the PLP. Therefore, the hydropower components are not the primary consideration of the LPP and alternatives.*

*FERC and the other permitting federal agencies should appoint a different and more appropriate lead agency to prepare an environmental impact statement for the LPP under NEPA. The federal agencies with jurisdiction over the pipeline have more comprehensive knowledge of the associated environmental issues and are better suited to being the lead agency for the NEPA process. See 40 C.F.R. § 1501.5(c) (factors for determining the lead agency include the agency's "[e]xpertise concerning the action's environmental effects"). The lead agency should be one with more experience in water supply projects.*

<sup>42</sup> PLP at 2-1 (“Issuing a FERC license for the LPP Project would enable the UBWR to generate electricity in project facilities to help offset electrical power consumed in pumping the water from Lake Powell to St. George, Utah.”).

#### **UDWRe Response:**

**While it is true that this project is a water conveyance project, the project includes proposed hydropower facilities. The power generated by the project may support the grid system in several alternative ways. The use of power from the project for project power needs would offset demands on the grid that might otherwise be made by the project.**

**18 CFR§ 1501.5(c) merely provides that if there are multiple agencies with NEPA responsibilities for the same action or related group of actions, the agencies shall determine which agency shall be the lead agency and which shall be cooperating agencies. The section sets forth various factors to be considered in choosing the lead agency “if there is a disagreement among the agencies.” BLM, Reclamation, and NPS have agreed to be cooperating agencies. FERC, as lead agency, and each cooperating agency, will be responsible for ensuring that the information and analyses needed to support its decisions are adequately addressed in the EIS. USFWS declined to be a cooperating agency. However, FERC and all other federal agencies with permitting responsibilities for elements of the entire project are consulting with USFWS as required by the Endangered Species Act and other applicable legislation so there is no possibility USFWS, FERC, or the other federal agencies will not be able to fulfill their statutory responsibilities.**

#### **American Rivers Comment 1:**

*American Rivers believes the proposed Project is out of step with efforts throughout the Colorado River Basin to reduce consumptive uses of water so as to defend against potential shortage, meet future demand, and adapt to Climate Change. The Project, which proposes to divert water out of the basin to facilitate development in Southern Utah,<sup>1</sup> is contrary to state and regional efforts to preserve lake levels in Lake Powell and reduce consumptive water use throughout the basin.*

<sup>1</sup>See, e.g., Office of the Legislative Auditor General State of Utah, “A Performance Audit of Projections of Utah’s Water Needs, Report to the Utah Legislature No. 2015-01,” (May 2015) (Utah Water Needs Audit), available at [http://le.utah.gov/audit/15\\_01rpt.pdf](http://le.utah.gov/audit/15_01rpt.pdf), Chapter III (describing opportunities to reduce demand for water through conservation).

#### **UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional**



**population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**American Rivers Comment 2:**

*Under 18 C.F.R. § 5.16(b), the PLP must “include the potential applicant's draft environmental analysis by resource area of the continuing and incremental impacts, if any, of its preliminary licensing proposal, including the results of its studies conducted under the approved study plan.” Under 18 C.F.R. § 380.03, UBWR must also: “(1) Provide all necessary or relevant information to the Commission; [and] (2) Conduct any studies that the Commission staff considers necessary or relevant to determine the impact of the proposal on the human environment and natural resources.”*

*We are concerned that the PLP does not provide adequate environmental analysis of the Project's potential impacts on endangered species and surface water resources, as discussed below. We request that UBWR, on its own initiative or at the direction of the Commission's Office of Energy Projects (OEP) Staff, supplement its environmental analysis as requested. In the alternative, we request that OEP Staff undertake such analysis in coordination with the Cooperating Agencies in the course of preparing the Environmental Impact Statement (EIS) for the Project in accordance with the National Environmental Policy Act (NEPA).<sup>2</sup>*

<sup>2</sup>OEP Staff stated its intent to prepare an EIS for the Project in Scoping Document 1, eLibrary no. 20080505-3014. American Rivers agrees that an EIS is appropriate for a project of this scale.

**UDWRe Response:**

**Your comment has been noted. The studies have been updated to provide environmental analysis of the LPP Project potential impacts on endangered species and surface water resources.**

**American Rivers Comment 3:**

**The PLP Does Not Adequately Describe UBWR's Proposal for Shepherding Water Diverted from Flaming Gorge Dam to Lake Powell.**

*UBWR proposes to shepherd water from Flaming Gorge Reservoir to Lake Powell to support project operations. We note that approximately 40 miles of the Green River flows through North Western Colorado. That is a significant distance. We request that UBWR revise or supplement the PLP to specifically describe how this water will be quantified in Lake Powell, what agreements are in place to ensure delivery, and how this proposed operation complies with the Law of the River.*

**UDWRe Response:**

**UBWR's proposal will not alter releases from Flaming Gorge Dam, or Green River flows below it. The water rights that will supply the LPP Project water are released as a small**

**portion of current and future Flaming Gorge Dam operations. This will be formalized through an agreement with Reclamation.**

**Utah Rivers Council Comment 1: General Comment:**

*Founded in 1995, the Utah Rivers Council is a 501(c)3 non--profit organization dedicated to the conservation and stewardship of Utah's rivers, sustainable clean water sources and natural ecosystems for both Utah's people and wildlife. The Utah Rivers Council is critically concerned with the impacts river diversions bring to Utah's river and wetland ecosystems.*

*The Utah Rivers Council has been one of the leaders in advocating for alternatives to the LPP. Our organization has put substantive resources into researching the economic impacts of the LPP and promoting less environmentally damaging alternatives to the LPP. FERC should require the applicants to revise the PLP to incorporate an economic analysis that shows the impacts of the debt from the LPP on Washington County and Kane County residents.*

**UDWRe Response:**

**Refer to the responses to Gail Blattenberger's comments in the General Comments section.**

**Utah Rivers Council Comment 2: General Comment:**

*Additionally, FERC should require the applicant to revise the No Action Alternative and the No Lake Powell Pipeline Water Alternative to more accurately account for the potential and effects of water conservation and local water sources in the area. FERC should require the applicant to address and incorporate all of the recommendations put forth in the 2015 report from the Utah Legislative Auditor General titled "A Performance Audit of Projections of Utah's Water Needs."*

**UDWRe Response:**

**A statewide 25 percent water conservation by 2025 goal was set; however, the regional goal for Districts' service areas is 35 percent. This is consistent with the audit's recommendations for regional conservation goals. The LPP Project is not intended to replace water made available through conservation, but rather to augment that supply in order to meet the demands of a growing population.**

**Utah Rivers Council Comment 3: General Comment:**

*Finally, since the Lake Powell Pipeline is primarily a water supply project we feel FERC is not the appropriate lead agency on the project.*

**UDWRe Response:**

**Refer to the response to Wester Resource Advocates Comment 3 in the General Comments section.**

**Utah Rivers Council Comment 4: General Comment:**

**The PLP does not include economic analysis on debt burden on proposed recipients of the LPP**

*There has been widespread concern within Utah of whether the proposed recipients of the LPP can repay the debt of the project. The Lake Powell Pipeline Development Act requires the recipients of the LPP to repay the State of Utah in full, with interest. A group of 21 PhD economists from universities across the state conducted several analyses of the impacts of the debt on area residents. Their analyses showed water rates, impact fees and property taxes would have to be raised substantially to repay the debt of the project over the next 50 years. Of course raising user fees by such a magnitude would greatly affect water customer behavior, likely reducing water demand to nearly half of what the current water use is in the area.*

*The applicant and proposed recipients of the LPP water have denied multiple Government Records Access Management Act (GRAMA) requests for a plan of how they would repay the substantial level of debt accruing by the proposed LPP. Knowing how the LPP would be repaid and how water rates and impact fees will be affected is extremely important when planning for the project because if water demand is significantly reduced, it will further eliminate the need for water from the LPP.*

*This causes two problems. Firstly, the purpose and need for the LPP is no longer valid since the project's water is unnecessary for both Washington and Kane counties. This is further supported by Washington County Water Conservancy District's admission that they will possess 105,000 acre--feet of water without the LPP. In fact, in many official state legislative discussions both the recipient and the applicant of the LPP have stated the purpose of the project is to prevent downstream state from using Colorado River water. We openly question whether preventing another user from using water satisfies purpose and need for the LPP.*

*Secondly, the Washington County Water Conservancy District has also indicated in numerous circles that it does not intend to construct power generation facilities at the onset of the project. Furthermore, given the applicant's repeated statements that the water from the LPP would be taken in blocks representing a fraction of the total water for the project, the generation of power appears to not be feasible given the small quantities of water which will be diverted for many decades. We therefore question why FERC is considering a hydropower project that will not generate hydropower.*

*The residents and decision--makers in Washington and Kane counties should also know how much their water rates and impact fees will go up if they participate in the LPP.*

#### **UDWRe Response:**

**The LPP Project will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

**(1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**

**(2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**

**(a) the delivery of developed water to the district during the first 10 years after the project is completed; or**

**(b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**

(3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.

(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.

Refer to the responses to Gail Blattenberger's comments in the General Comments section.

#### Utah Rivers Council Comment 5: *General Comment:*

**The PLP does not incorporate the findings and recommendations of the recent Legislative Audit of the Utah's water planning practices**

*A May 2015 performance audit from the Office of the Legislative Auditor General shows Division data is unreliable and inaccurate. The report titled, "A Performance Audit of Projections of Utah's Water Needs," contained the following sections:*

- *Planning Utah's water future is increasingly important*
- *Questions about accuracy of Division's projections led to audit request*
- *Reliability of water use data needs to improve*
- *The Division does not have reliable local water use data.*
- *The Division needs an improved process for ensuring that water data is reliable.*
- *The reliability of the Division's Baseline Water Use Study is questionable, and the source data and methods used to prepare the Baseline Study are poorly documented.*
- *The accuracy of the Division's water demand projections is uncertain.*
- *Conservation and policy choices can reduce demand for water*
- *Conservation will lead to less water use*
- *Some regions can reduce water use beyond the statewide goal of 25 percent*
- *Growth in future water supply should be reported to policy makers*
- *Division projections should include expected local water development*
- *Good basin plans should be the basis for better statewide planning*

*The Audit found many critical errors with how the Division collects data and plans for new projects, including an instance where the Division used data from a water supplier in the state of New York instead of a city in Utah with a similar name. It is particularly concerning that the Division is using this same data to plan for expensive and complex projects like the LPP.*

*The Division of Water Resources stated that they agree with the findings of the Audit and agrees to incorporate the recommendations, but the PLP does not include any of these recommendations. The PLP should be held until the Division fully incorporates these recommendations and the citizens of Utah can be sure the data used to plan for the LPP is completely accurate.*

#### UDWRe Response:

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights,**

and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans. It is important to note that the Division of Water Rights, the agency that collects water use data, is working on improving its processes to address many of the audit recommendations related to data accuracy. Data and methodologies will continue to evolve as evidenced by the auditor's statement that the 2010 numbers showed marked improvement.

The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.

UDWRe and the participating entities will work closely with the Governor's Office and State Legislature in order to ensure the financial framework to fund the LPP is reasonable from a state perspective and based on accurate data and information. These goals as well as other audit recommendations can be achieved concurrently with a NEPA/EIS process.

#### **Growth, Water Resources and Conservation in Washington County, Utah**

##### **Washington County: By the Numbers**

\$4.5 billion personal income<sup>1</sup>  
 \$4.4 billion gross domestic product<sup>2</sup>  
 \$233 million total taxable sales  
 5.6 million annual tourists<sup>3</sup>  
 151,948 residents<sup>4</sup>  
 62,012 Jobs<sup>5</sup>  
 44,073 primary residential properties<sup>6</sup>  
 11,391 secondary residential properties<sup>7</sup>  
 579 farms<sup>8</sup>

Washington County is currently leading the state of Utah in terms of water conservation accomplishments, having achieved a 26 percent reduction in use from 2000 to 2010<sup>9</sup> compared to the state's average of 18 percent.<sup>10</sup> This is quite an accomplishment considering Washington County is located in the most arid and hot region of the state<sup>11</sup> with more than triple the number of growing days than northern Utah.<sup>12</sup>

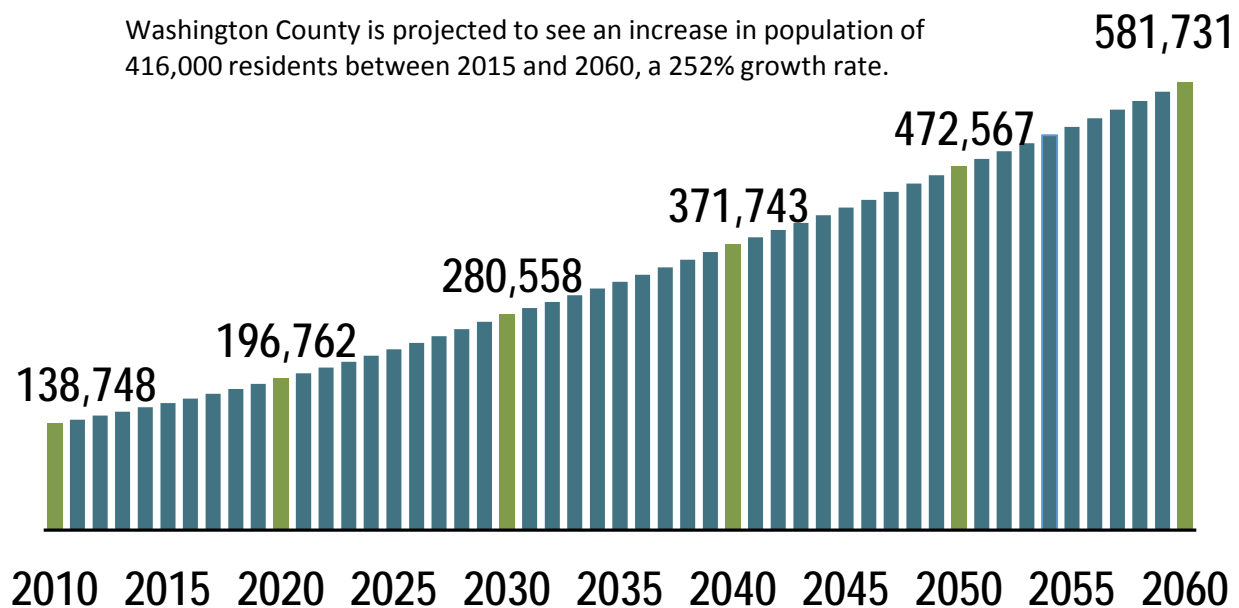
#### **Climate Averages for Utah and Washington County**

	Utah Averages	Washington County Averages
Average temperature	54.8 degrees F <sup>13</sup>	62.3 degrees F <sup>14</sup>
Average annual precipitation (rain)	18.58 inches <sup>15</sup>	8.85 inches <sup>16</sup>
Average annual snowfall	47 inches <sup>17</sup>	1 inch <sup>18</sup>
Annual days of sunshine	127 <sup>19</sup>	300 <sup>20</sup>
Average growing days	60 <sup>21</sup>	190 <sup>22</sup>



Equally impressive is the fact that St. George's population grew 52.9% during this same timeframe (2000-2010),<sup>23</sup> earning a ranking as one of America's fastest-growing cities – a title the city has maintained for most of the last decade. In 2015, St. George ranked 6th in “best small places for business and careers” and 7th in job growth by Forbes.<sup>24</sup> Employment opportunities have increased 6.4 percent during the last year bringing the total number of jobs in Washington County to more than 62,000 as of January 2016.<sup>25</sup> The county is not only seeing an increase in employment opportunities, but also an increase in wages as workers are earning 9.3 percent more today than they were in 2015.<sup>26</sup> The growth of additional, higher paying jobs is anticipated to further attract residents to the area. The latest population projections from the Utah Governor's Office of Management and Budget estimate Washington County's population will increase 252% by 2060,<sup>27</sup> making it the fastest-growing county in Utah.

**Utah Governor's Office of Management and Budget Population Projection for Washington County**



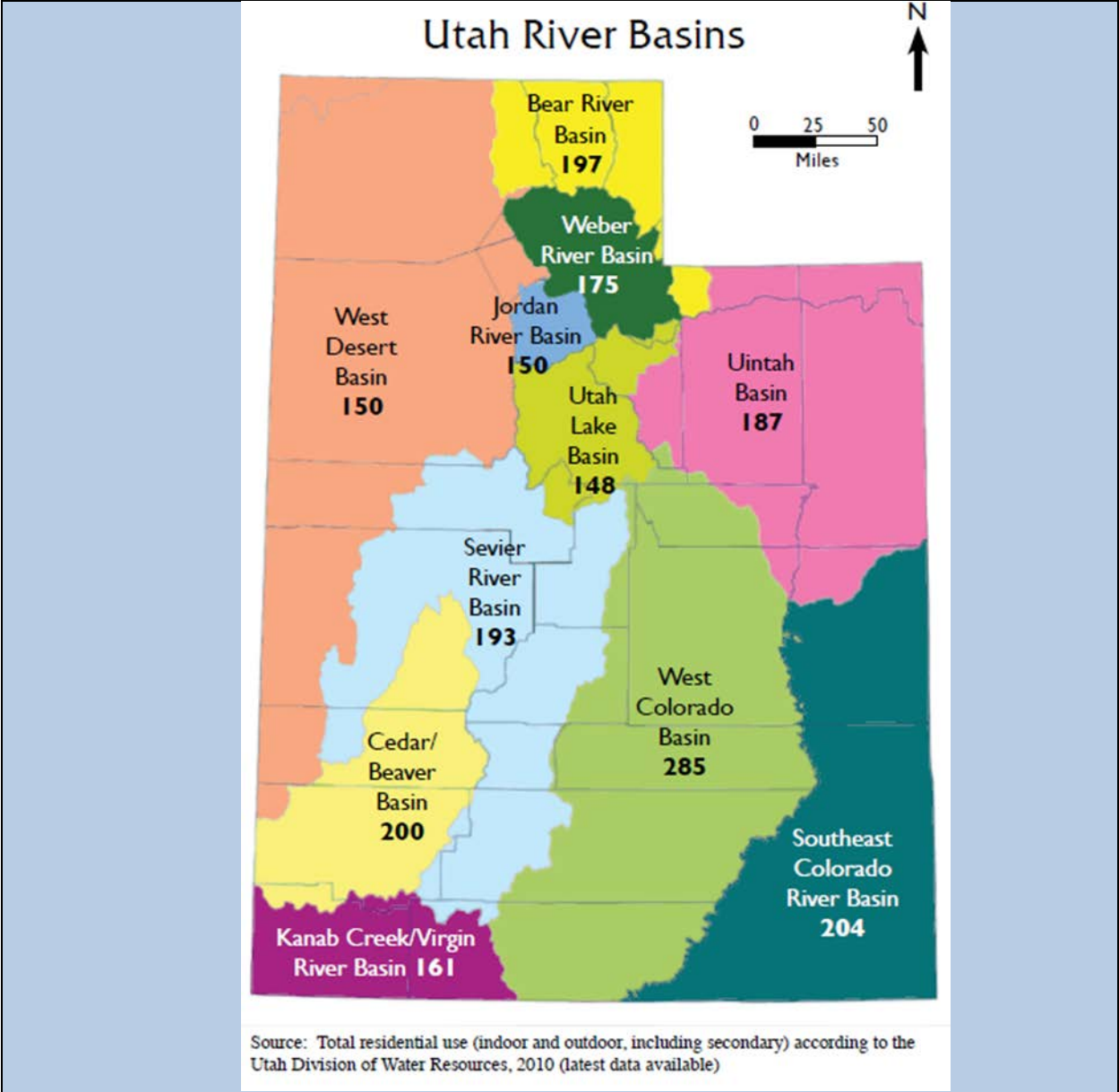
In 2014, the US Census Bureau reported that 90 percent of Utah's population increase was from natural growth. In that same year, St. George reported 52 percent of its population increase was from natural growth while 48 percent was from net migration.<sup>28</sup> Many of Utah's newest residents are choosing to live in Washington County.

Economic and population growth stress existing water resources, which are scarce in Washington County. The area is using 82 percent<sup>29</sup> of its current supply of 59,170 acre feet.<sup>30</sup> The district plans to add 13,670 acre feet from local projects currently in development<sup>31</sup> and 82,249 acre feet from the Lake Powell Pipeline Project<sup>32</sup> to meet future demands.

Continued and more aggressive conservation efforts will also be required to bridge the gap between future water supply and demand. Washington County Water Conservancy District was the first district in the state of Utah to adopt a water conservation plan<sup>33</sup>; open a desert conservation garden, Red Hills Desert Garden<sup>34</sup>; eliminate traditional “take or pay” municipal water contracts and regionalize its water system to encourage conservation<sup>35</sup> and one of the first counties to meet Governor Gary Herbert’s request to reduce water use 25 percent by 2025.<sup>36</sup>

During the last two decades, the district and its municipal partners have done more to conserve water than any other local organization, investing millions of dollars annually into conservation initiatives. Efforts include, but are not limited to, converting 1,350,000 feet of open canals to pipelines, repairing leaking pipes, installing meters, developing two water conservation demonstration gardens, overseeing annual Water Fairs for more than 40,000 students, hosting more than 200 free community events and performing more than 2,000 free irrigation audits. The district launched its rebate program in 2005 and has distributed nearly \$1 million to local businesses and residents who have installed water efficient irrigation systems, plumping fixtures and commercial equipment. These efforts are publicized through an extensive local media campaign that involves print, television, radio and social media advertisements. The district also contributes funding to the statewide Slow the Flow campaign.

In addition, the district requires its municipal partners have a conservation plan, a tiered conservation rate structure, landscaping ordinances and time of day watering ordinances to purchase water from the district through its Regional Water Supply Agreement.<sup>37</sup> Each municipality determines the terms and level of enforcement of these requirements; the district does not have the jurisdiction to dictate or enforce municipal ordinances. The collective efforts of the district and its municipal partners have resulted in tremendous water use reductions. According to the Utah Division of Water Resources, residential water use in the Kanab Creek/Virgin River Basin (primarily located in Washington and Kane counties) is among the lowest in the state.



<b>Comprehensive Water Conservation Plans</b>	<b>Universal Metering</b>	<b>Incentive Water Conservation Pricing</b>
<b>Landscape Ordinances</b>	<b>Water Conservation Coordinator</b>	<b>Public Information Program</b>
<b>Time of Day Watering Ordinances</b>	<b>School education programs</b>	<b>Efficient Outdoor Use Education and Training Program</b>
<b>CII to Replace Inefficient Equipment</b>	<b>Distribute Retrofit Kits</b>	<b>Irrigation Water Surveys (Water Checks)</b>
<b>Financial Incentives for Irrigation Upgrades</b>	<b>High Efficiency Toilet Rebates</b>	<b>High Efficiency Urinal Rebate</b>

Multifamily Washer Rebate	Real Water Loss Reduction	Replace Spray Nozzles
Rotating Sprinkler Nozzle Rebates	Single Family Water Surveys	Smart Irrigation Controller Rebates
Toilet Leak Detection	Train Landscape Maintenance Workers	Xeriscape Demonstration Gardens
Billing Report Educational Tool	CII Surveys	Install High Efficiency Fixtures in Government Buildings
School Building Retrofit	Water Budgeting Monitoring	Large landscape conservation programs and incentives

Additional information is available for each program in the district's 2015 Water Conservation Plan, available on [wcwcd.org](http://wcwcd.org). This plan notes that the district will continue updating its conservation plan every five years to incorporate new advancements and technology to increase water reduction goals. The district's current goal is to reduce use 35 percent by 2060.

<sup>1</sup> US Bureau of Economic Analysis, February 18, 2016

<sup>2</sup> US Bureau of Economic Analysis for St. George MSA (UT) October 23, 2015

<sup>3</sup> Dixie Convention and Visitors Authority, May 2015

<sup>4</sup> US Census Bureau, Washington County (UT), April 7, 2015

<sup>5</sup> Bureau of Labor Statistics, Washington County (UT), March 19, 2016

<sup>6</sup> Washington County Assessor's Office, May 1, 2015

<sup>7</sup> “

<sup>8</sup> 2012 Census of Agriculture (published every five years) as reported on page 65:

<http://ag.utah.gov/documents/annualreport2015web.pdf>

<sup>9</sup> Statewide Water Infrastructure Plan, 2014

<sup>10</sup> “

<sup>11</sup> <http://www.usclimatedata.com/climate/utah/united-states/3214>

<sup>12</sup> “Growing seasons range from 60 days in northern Utah to 190 days in the southern part of the state” Utah Agriculture in the Classroom: a Utah State University Extension:

<https://www.agclassroom.org/kids/stats/utah.pdf>

<sup>13</sup> <http://www.usclimatedata.com/climate/utah/united-states/3214>

<sup>14</sup> <http://www.usclimatedata.com/climate/ivins/utah/united-states/usut0413>

<sup>15</sup> <http://www.usclimatedata.com/climate/utah/united-states/3214>

<sup>16</sup> <http://www.stgeorgechamber.com/live-here/area-information/climate-2/>

<sup>17</sup> <http://www.usclimatedata.com/climate/utah/united-states/3214>

<sup>18</sup> <http://www.usclimatedata.com/climate/ivins/utah/united-states/usut0413>

<sup>19</sup> 3059 hours reported divided by 24 to get the number of days:

<http://www.usclimatedata.com/climate/utah/united-states/3214>

<sup>20</sup> Copy reads “over 300 days” rounded to 300 to be consistent with other sources:

<http://www.stgeorgechamber.com/live-here/area-information/climate-2/>

<sup>21</sup> <https://www.agclassroom.org/kids/stats/utah.pdf>

<sup>22</sup> “Growing seasons range from 60 days in northern Utah to 190 days in the southern part of the state” Utah Agriculture in the Classroom: a Utah State University Extension:

<https://www.agclassroom.org/kids/stats/utah.pdf>

- <sup>23</sup> CNN Money, 10 fastest-growing cities:  
[http://money.cnn.com/galleries/2011/real\\_estate/1103/gallery.Fastest\\_growing\\_metro\\_areas/2.html](http://money.cnn.com/galleries/2011/real_estate/1103/gallery.Fastest_growing_metro_areas/2.html)
- <sup>24</sup> <http://www.forbes.com/places/ut/st-george/>
- <sup>25</sup> Bureau of Labor Statistics – Local Area Unemployment Statistics for Washington County, UT: <http://download.bls.gov/pub/time.series/la/la.data.52.Utah>
- <sup>26</sup> Bureau of Labor Statistics – State and Area Employment, Hours and Earnings:  
<http://download.bls.gov/pub/time.series/sm/sm.data.46.Utah>
- <sup>27</sup> <http://governor.utah.gov/DEA/demographics.html>
- <sup>28</sup> US Census Bureau reported that St. George’s population was 78,505 in 2014 and 76,817 in 2013, or an increase of 1,688 new residents divided by the reported 810 net migration in 2014 to get 48 percent: <http://www.forbes.com/places/ut/st-george/>
- <sup>29</sup> Economic Value of Water, Utah Water Users Association, March 15, 2016
- <sup>30</sup> 2015 Water Needs Assessment
- <sup>31</sup> 2015 Water Needs Assessment
- <sup>32</sup> Utah Division of Water Resources,  
<http://www.water.utah.gov/LakePowellPipeline/GeneralInformation/default.asp>
- <sup>33</sup> 2015 Water Conservation Plan, Washington County Water Conservancy District
- <sup>34</sup> *Public Invited to Red Hills Desert Garden Dedication and Community Celebration*, press release distributed October 2, 2015 by Washington County Water Conservancy District
- <sup>35</sup> <http://www.wcwcd.org/customers/municipal/>
- <sup>36</sup> Statewide Water Infrastructure Plan, 2014
- <sup>37</sup> <http://www.wcwcd.org/wp-content/themes/wcwcd/pdf/municipal/RWSA.pdf>

#### Western Lands Project Comment 1: *General Comment:*

*For almost 20 years, the Western Lands Project has monitored projects on public lands in Washington County as part of our larger mission to prevent privatization of public lands across the West. We have submitted comments on land exchanges and land sales proposed by the BLM, as well as federal legislation that would have earmarked public lands in the county to be sold for development. We recently submitted comments on the management plan for the Red Cliffs and Beaver Dam Wash NCAs. This area has required special attention because of the phenomenal growth occurring over the past decade-plus and the attendant impacts on adjacent public lands.*

*As an organization working to protect the integrity of public lands, we are opposed to the Lake Powell Pipeline and believe that the project should be dropped from consideration now, before further cost is accrued in both time and money. There are a number of flaws underlying the proposal, including lack of accurate data regarding water resources and use, a failure to consider conservation and other options as alternatives to the pipeline, and the growth that will be driven and facilitated by the project simply to be able to pay for it.*

#### UDWRe Response:

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously. The LPP study team has studied this project in-depth, researching extensively beyond the basic planning found in the state water plan.**

#### Western Lands Project Comment 2: *General Comment:*



*The very high per capita water consumption in Washington County begs the question as to why conservation has not been considered the obvious and immediate approach to ensuring a future water supply in the area. As the Western Resource Advocates report indicates, a combination of conservation, reuse, and conversion of uses could obviate the need for developments such as the pipeline.*

**UDWRe Response:**

Washington County's per capita usage is often compared against per capita usages that are not calculated the same way. Communities in other states may not include commercial, institutional, industrial or secondary water use, and may also subtract return flows from wastewater to calculate per capita water use. In addition, Washington County has a significant portion of non-resident users which add to the total per capita use. Differences in factors such as, climate and housing density, also make it difficult to compare per capita usage across communities fairly.

WCWCD recognizes conservation is essential in meeting future water needs. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Conservation above the levels used in these reports is encouraged by WCWCD; however, the conservation goals used are prudent for planning. These goals have been vetted by Division of Water Resources, each district, community participants, and Maddaus Water Management. They exceed current state goals, utilize available technologies, and, importantly, are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County.

Although not described as such, Western Resource Advocates requires aggressive conservation in their Local Waters Alternative while underestimating the costs, social and environmental impacts associated with such measures. The No Lake Powell Water Alternative for Washington County includes a combination of conservation, reuse, and conversion of uses; however, the high cost of desalinating of water converted from agricultural use and the cost of aggressive conservation make this alternative less favorable economically than the Lake Powell Pipeline.

**Western Lands Project Comment 3: *General Comment:***

*Right-of-way for such a wasteful, environmentally damaging, and unsustainable project is not a use worthy of our public lands. We urge FERC to suspend consideration of the project and decline to proceed with a National Environmental Policy Act analysis that can only conclude the project is a mistake and which would simply waste tens or hundreds of thousands of hours of time better spent more productively.*

**UDWRe Response:**

UDWRe disagrees with this comment for reasons fully explained elsewhere in the license application.

**Utah Native Plant Society Comment 1:**

***Special Status Plant Species and Noxious Weeds Assessment Revised November 2015***

*There are reliable sources that are predicting that Lake Powell will become a "dead pool" by the 2020's yet in this proposal 50-year predictions are being made. This is foolhardy. Population*

*growth in the area cannot be sustained indefinitely. Without predictions as to population constraints, it is utterly premature to initiate yet another water project without looking at realistic sustainable options. Projects like this will simply put real solutions off into the future for future generations to try to deal with, and their options are becoming increasingly limited.*

**UDWRe Response:**

**Your comment has been noted. The LPP Project is not intended to replace potential additional available water via conservation, but to augment that water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies will need to be implemented simultaneously. The LPP Project study team has studied this project in-depth, researching extensively beyond the basic planning found in the state water plan.**

**Utah Native Plant Society Comment 2:**

***Special Status Plant Species and Noxious Weeds Assessment Revised November 2015***  
*Should this project nonetheless proceed, we find that Draft Study Report 12 with respect to special status plant species is completely inadequate for serious consideration at this time. A cursory review suggests that a huge document has been submitted to try to make it look as though the study has met some high threshold. In other words we believe that the study has been made to appear to be more exhaustive and definitive than it really is, and it fails to focus and find solutions for sensitive and other plant species and pollinators that will be impacted.*

**UDWRe Response:**

**UDWRe's view is that the Final Study Report is consistent with the FERC-approved study plan.**

**Utah Native Plant Society Comment 3:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015***  
*The document is old and out of date and requires numerous updates. While indicating that it was revised in November 2015 that is very misleading. All of the footer pages of the document indicate "Utah Board of Water Resources" which may not even be the actual applicant and is dated primarily "12/30/10." Further, we understand that this document may be getting revised during this comment period which means the latest revisions are not even available for review.*

*A further example of the above is the inapplicable inclusion of *Eriogonum corymbosum* var. *nilesii* in this document. Based on further genetic and other studies, that species does not occur in the study area, nor does it occur in Utah. Further, a species like *Eriogonum mortonianum* is now considered even more rare with a sole population in the Fredonia area and does not occur in Utah. Its habitat in Fredonia should not be disturbed and an ample buffer zone provided. Some of the surveying may have been inappropriately conducted by helicopter rather than on the ground.*

**UDWRe Response:**

**Study Report 12 Special Status Plants and Noxious Weeds has been revised to address current status of plant species that were documented in vegetation surveys conducted in the LPP Project area between 2008 and 2012. The current revision does amend the survey**

results or intend to suggest that these surveys would be valid during construction of the project. Some ecological systems were identified by helicopter however no species presence/absence determinations were made from aerial habitat surveys. It is understood that rare and sensitive plant and wildlife surveys will be conducted prior to project implementation. Revisions to Study Report 12 include:

**Camissonia exilis, Eriogonum corymbosum var. nilsii, Eriogonum mortonianum, Eriogonum thompsoniae atwoodii, Pediomelum castoreum Penstemon laevis Tricardia watsonii and Iris parions, have been removed from Table 3.1. and effects determinations. Some plant species were identified as species of concern by agency botanists during the initial compilation of target species for the biological surveys, though they do not have any recognized special status.**

**Utah Native Plant Society Comment 4:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015***

*The exact authors and their agencies, and who are subcontractors and who are “agency botanists” are not fully and easily identified. We also find it very disconcerting that the Utah government agency submitting the application apparently failed to use local, knowledgeable Utah/Arizona botanists/taxonomists and instead outsourced the bulk of this project to individuals who do not have the same level of Utah native and rare plant expertise.*

**UDWRe Response:**

**The individuals conducting the special status plant and noxious weed surveys were qualified botanists and field biologists—the principal investigators, Gary Reese and Bruce Palmer, each have decades of experience conducting botanical surveys and specific experience conducting rare plant surveys in Southern Utah and on the Arizona Strip.**

**Utah Native Plant Society Comment 5:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015***

*Areas to be impacted must be surveyed at different times of the year (spring and late summer/fall at an absolute minimum). Once is not enough. Botanists need to walk the paths and be present when habitat is disturbed; construction crews do not understand biology, are not focused on issues related to ecosystems, and cannot be left unsupervised.*

**UDWRe Response:**

**Special status plant surveys were conducted over multiple years, with observations on climatic conditions and the impact of these conditions on survey results noted in Study Report 12. Additional surveys may need to be conducted during the NEPA process to support the development of an Environmental Impact Statement, or as preconstruction surveys to aid in the avoidance of known occurrences of special status plant species during the final siting of the various project features.**

**Utah Native Plant Society Comment 6:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015***

*Our understanding is that **NO consultation with the US Fish & Wildlife Service** has occurred yet there are several federally listed species that occur in the study area. Until consultation occurs, a preliminary study or DEIS cannot even be properly prepared.*

**UDWRe Response:**

**UDWRe has held preliminary, informal consultation meetings with the USFWS on the LPP Project. Formal consultation occurs between federal agencies. Biologists with the USFWS, BLM, NPS, and Bureau of Reclamation all participated and contributed to preparation and review of the study plans involving special status aquatic resources, plant species and wildlife, including federally listed species. FERC, as the lead agency for NEPA compliance, will complete the formal consultation process with USFWS for the LPP Project.**

**Utah Native Plant Society Comment 7:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015**  
Rare/sensitive populations must be avoided. While avoidance is discussed with respect to gypsum badlands that the principle should apply for all rare/sensitive plant issues: avoid any direct incursion to populations.*

**UDWRe Response:**

**UDWRe will comply with all required measures to protect endangered, rare, and special plant species.**

**Utah Native Plant Society Comment 8:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015**  
There is a failure to properly and fully discuss buffer zones. Avoidance means more than just not direct impacting populations but also providing for buffer zones of at least 300 feet (bare minimum) for all sensitive species, and 750 feet (or some may require more) for species with a federal status including the candidate species, *Eriogonum mortonianum*.*

**UDWRe Response:**

**Applicable buffer zones for federally listed, candidate and sensitive plant species have been considered in the Final Study Report and Exhibit E.**

**Utah Native Plant Society Comment 9:**

***Special Status Plant Species and Noxious Weeds Assesment Revised November 2015**  
The extrapolations of plant numbers are almost certainly faulty and are definitely so with *Eriogonum mortonianum* which has more recently been studied. Detailed methodology is lacking but there are not 58,000 plants of that species. Some of the numbers projected for Atwood's phacelia (*Phacelia pulchella* var. *atwoodii*) are also most certainly faulty and/or based on misidentifications and border on the absurd, and those projections have not been accepted as accurate by either Utah rare plant experts. Creation of the corridor will simply create a pathway for invasive species the future significant cost for control of which had not been adequately analyzed.*

**UDWRe Response:**

**UDWRe’s methodologies would be reviewed by appropriate resource and land managing agency experts.**

**Utah Native Plant Society Comment 10:**

*Special Status Plant Species and Noxious Weeds Assesment Revised November 2015*  
*Vehicle tires and vehicles in general have to be constantly cleaned as well as worker foot wear and clothing to avoid the spread of weeds.*

**UDWRe Response:**

**Your comment has been noted.**

**Utah Native Plant Society Comment 11:**

*Special Status Plant Species and Noxious Weeds Assesment Revised November 2015*  
*The draft study for sensitive species in its current state is incapable of accurate analysis given the many defects and newer information that has come to light. Additional on the ground work is also be needed, i.e. it is not just a matter of editing that is required for proper consideration. Consultation with the USFWS must occur as well.*

**UDWRe Response:**

**Your comment has been noted.**

**Brian Ainsley, et al, Comment 1:** *(102 Individual Commentors with essentially the same comment – Please see the table following the response to Brian Ainsley, et al, Comment 5 for a list of the individual commenters associated with this comment)*

*Despite the fact that the State of Utah has spent 8 years and \$27 million of taxpayer money on the studies for the Lake Powell Pipeline, there are significant concerns that are not being properly addressed in the latest study reports:*

*1. An audit on the Division of Water Resources shows that flawed data is being used to demonstrate the need for this pipeline.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for the LPP Project go into far more detail than statewide or regional plans.**

**The region benefiting most from the proposed LPP Project already met the Governor’s 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**



**UDWRe and the participating entities will work closely with the Governor's Office and State Legislature in order to ensure the financial framework to fund the LPP is reasonable from a state perspective and based on accurate data and information. These goals as well as other audit recommendations can be achieved concurrently with a NEPA/EIS process.**

**Brian Ainsley, et al, Comment 2:** *(102 Individual Commentors with essentially the same comment – Please see the table following the response to Brian Ainsley, et al, Comment 5 for a list of the individual commenters associated with this comment)*

*Despite the fact that the State of Utah has spent 8 years and \$27 million of taxpayer money on the studies for the Lake Powell Pipeline, there are significant concerns that are not being properly addressed in the latest study reports:*

- 2. All the costs of the pipeline, including financing, operations and maintenance should be clearly presented. Currently those costs are not included.*

**UDWRe Response:**

**The LPP Project will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

- (1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**
- (2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**
  - (a) the delivery of developed water to the district during the first 10 years after the project is completed; or**
  - (b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**
- (3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**
- (4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**Brian Ainsley, et al, Comment 3:** *(102 Individual Commentors with essentially the same comment – Please see the table following the response to Brian Ainsley, et al, Comment 5 for a list of the individual commenters associated with this comment)*

*Despite the fact that the State of Utah has spent 8 years and \$27 million of taxpayer money on the studies for the Lake Powell Pipeline, there are significant concerns that are not being properly addressed in the latest study reports:*

- 3. Less expensive alternatives to the pipeline such as better water management, greater emphasis on conservation and more effective use of existing supplies must be included fairly and without bias when analyzing the pipeline.*

**UDWRe Response:**

**The LPP Project is not intended to replace potential additional available water via conservation, but to augment that water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies will need to be implemented simultaneously.**

**The region benefiting most from the proposed LPP Project already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Brian Ainsley, et al, Comment 4:** *(102 Individual Commentors with essentially the same comment – Please see the table following the response to Brian Ainsley, et al, Comment 5 for a list of the individual commenters associated with this comment)*

*Despite the fact that the State of Utah has spent 8 years and \$27 million of taxpayer money on the studies for the Lake Powell Pipeline, there are significant concerns that are not being properly addressed in the latest study reports:*

*4. The studies do not sufficiently consider the impact of Climate Change on current and projected flows of the Colorado River and its ability to supply water for the pipeline.*

**UDWRe Response:**

**The BOR basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report.**

**The impact of Climate Change on Colorado River flows is discussed in the literature review of Study Report 19 Climate Change. The ability to supply water for the pipeline is evaluated with the CRSS model and shown in results titled “Powell Pool Elevations.” Results titled “Powell Releases” give the reader insight to effects in the Colorado River downstream of Lake Powell. The CC datasets used in the CRSS were developed using downscaled GCM model output. The text in Study Report No. 19 Climate Change clearly states that “that these model results do not represent what the actual reservoir elevations or releases will be in any particular year. Model results should be interpreted based on the relative differences between the action and no action alternatives.” Relative differences are also compared for the alternatives between CC hydrology datasets and DNF hydrology datasets to evaluate the variability of the effects with respect to climate change in Study Report 18 Surface Water Resources.**

**Brian Ainsley, et al, Comment 5:** *(102 Individual Commentors with essentially the same comment – Please see the table following the response to this comment for a list of the individual commenters associated with this comment)*

*Despite the fact that the State of Utah has spent 8 years and \$27 million of taxpayer money on the studies for the Lake Powell Pipeline, there are significant concerns that are not being properly addressed in the latest study reports:*

*5. The studies do not sufficiently consider the negative impact on the Grand Canyon ecosystem of draining 28 billion gallons of water out of the Colorado River each year. This is the costliest part of all!*

**UDWRe Response:**

The data shows that downstream releases at Glen Canyon Dam will not be impacted and therefore the Grand Canyon's ecosystem would not be negatively impacted.

**Brian Ainsley, et al, list of commenters**

Brian Ainsley	Teresa Foster	Edward Kosmicki	Susan Selbin
Kathryn Amodio	John Friestad	Suzanne Krueger-Koplin	Nia Sherar
Pat Anderson	Lydia Garvey	KX BX	Ron Silver
J. Angell	Vicky Goldstein	Greg Llano	Beverly Simone
Bonnie Barfield	Jose Gonzales	Laura Lynch	Joni Smith
Michael Bauer	Margaret Goodman	Walker Mackay	April Smith
Elaine Becker	Peter Gorzalski	Mario Manzo	Greg Speer
Drew Beckwith	Benjamin Grangereau	John Massman	James Spickard
Alison Brockmeyer	Tony Greiner	Mary Jo Masters	Brian Stafford
Kathy Burge	Tim Guisinger	Dave McFawn	Sarah Stewart
Stephen Burns	Warwick Hansell	Patricia McKelvie	Nancy Terrill
Rebecca Canright	Art Hanson	Stephen McMath	Amber Tidwell
James Cooke	Natalie Hanson	Amanda McNeil	David Ulibarri
Heide Coppotelli	Kathy Harris	Rodney Merrill	Paul Van Ginkel
Jared Cornelia	Mark Hayduke	Lore Messuri	John Viacrucis
Ann Craig	Melissa Henricksen	Robert Miller	Scott Vickers
Sheilagh Creighton	Steven Hernandez	Karen Monson	Mark Walch
David Ellenberger	Vickie Honchen	William Mooz	Megan Warren
Matthew Emmer	Celeste Hong	Robin Patten	Ann Whitcomb
Walker Everette	James Hubbard	Susan Peirce	Michael Wichman
Roger Faaborg	JoLynn Jarboe	Ivan Pfeifer	Cliff Wilkinson
Ron Faich	Erica Johanson	Zackary Podmore	Kevin Winter
Rick Fiaella	Abigail Johnson	Susan Posner	Gary Wockner
John Felder	Noah Katz	William Rivers	Crista Worthy
James Flanagan	Richard Khanlian	Robert Rutlowski	Nancy York
Glenda Fletcher	Ed Kosmicki	Douglas Safarik	

**Richard Kohler Comment 1:**

*I am an architect, a democrat and an environmentalist. I am also currently president of the Washington County Historical Society. The early ditches, diversions and canals built by Mormon colonists in our county served as models for reclaiming the arid west by irrigation. The first national irrigation congress was in 1890 in Salt Lake City. Eventually, this movement led to the Bureau of Reclamation and the Colorado River compact. The Lake Powell Pipeline is a logical and sustainable continuation of this project which allowed the arid west to be settled.*

*I count among my friends members of Citizens for Dixie's Future directors. At the heart of my most heated arguments with them, I assert that "climate change" is a major reason to construct the LPP and not to oppose it. The likelihood of less snowpack and more monsoon rainfall supports diverting less than 1% of the Lake Powell water that is discharged to the lower basin states annually. My CDF friends instead choose to tell the public that Lake Powell will dry up, or that all the water will be taken by lower basin states according to the Colorado River Compact. I argue that Washington and Kane counties are presently part of the Lower Basin and would be subject to "water call" regulations imposed on the Lower Basin in times of scarcity. By having the LPP, we would have water sources in both Upper and Lower Basins, hence a better "political" position for water security. I have reviewed numerous studies on the probable impact of climate change with CDF directors, predicted decreases of water in the Upper Colorado River Basin of 5 to 10 % 2060, do not support Lake Powell "drying up", but are consistent with future "water calls" in the Lower Basin.*

**UDWRe Response:**

**Your comment has been noted.**

**Richard Kohler Comment 2:**

*My other major disagreement with the leadership of CDF is their unfounded belief that turf replacement water rebates are a good thing. We regularly discuss the Southern Nevada Water Association program which gives \$1.50/sf to homeowners who replace traditional lawns with xeriscape. This summer because of the California drought publicity we began to discuss the similar Metropolitan Water District rebates or \$2/sf combined with other local Southern California municipal water district rebates averaging \$1.50/sf, total \$3.50/sf. In Las Vegas, SNWA conducted a 2005 study that concluded the change to xeriscape would save 30% of the water required by traditional lawns. In 2004 study, the Las Vegas area golf courses calculated that 55" of water were required each year to keep cool season grasses (fescue, Kentucky blue) healthy and green. So for each \$1.50, 30% of 55", or 16.5" of water was saved. The cost of saving an acre foot of water is 43,560 x \$1.50 divided by 16.5/12 feet or \$47,520 per acre foot. In Southern California, the MWD conducted a 2013 study which concluded that for residences, the change to xeriscape would save 18.2% of the water needed for natural turf. Studies at UC Riverside place turf water use at 48 inches for cool season grasses, with warm season grasses requiring 38 inches of water per year. A savings of 9 inches of water per sf of turf at a cost of \$3.50. Again, 43,560 x \$3.50 divided by 9/12 feet results in a cost of \$209,423 per acre foot. Note that these costs only include the rebate to homeowners. Costs of advertising, administration, enforcement officers, research, etc. are not estimated. Present estimates of \$1 billion for the LPP delivering 86,000 acre-feet \$11,628 per acre foot. Despite these facts, leaders of CDF continue to state publicly that xeriscaping should be mandated in Washington County and that rebates should be offered. They often claim that all the water required for traditional landscaping can be saved by switching to xeric landscapes.*

**UDWRe Response:**

**Your comment has been noted.**

**Richard Kohler Comment 3:**

*The scientific data about climate change effects, while continually changing, is real. As an architect I have found it necessary to understand "urban heat island" impacts. Changes from traditional landscapes to xeric landscapes increase the ambient temperature. Studies conducted by Arizona State University in 2014 measured a 3°F increase during a four hour afternoon period in summer, when mesic and xeric landscapes were compared. Electric utility cost increases to pay for the air conditioning to offset the 3°F increase can be estimated from 12% to 24%, if there is no surcharge for peak power periods. California's PG&E afternoon peak rates are \$0.35/kWh compared to \$0.20/kWh base. According to Tamim Younos, a professor of water resources at Virginia Tech, it takes "an average of 25 gallons of water to produce 1 kilowatt-hour of electricity." If an average customer purchases 700 kWh per month, a 3°F temperature increase would mean an additional 150 kWh per household. This can be a significant addition when the average per capita per day indoor water use is about 50 gallons. Assuming an average family size of 2.5, the 3°F temperature change will add another 48 gallons per day per person during the cooling season, practically doubling the indoor water use, if it were counted. Of course it isn't counted because this peak period electricity is necessarily imported to the county where it is consumed.*

**UDWRe Response:**

**The heat island effect has been documented to increase summertime peak energy demand, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality, and water quality ([www.epa.gov/heat-islands](http://www.epa.gov/heat-islands)). These effects should be studied whenever aggressive conservation efforts, which eliminate or severely restrict trees and vegetation, are considered for implementation.**

**Richard Kohler Comment 4:**

*The Lake Powell Pipeline cost of \$1 billion included at least \$200 million for power infrastructure. I commend the project planners for their proposal to pump water up the Hurricane Cliffs using off-peak power and release it down during peak periods as a cost saving measure. However, I believe there are opportunities for savings of both capital costs and operating costs with the use of renewable energy. Solar PV, solar thermal, geothermal and wind energy are all available in the project area. Understanding that the "sun doesn't always shine and the wind doesn't always blow", we must also understand that during the first thirty years after the LPP is built, the "water won't always have to be pumped". This coincidence makes it possible for renewables to play a big role. Solar thermal can drive generators just as well as natural gas.*

**UDWRe Response:**

**Your comment has been noted.**

**John C. Browne Comment 1:**

*Water need projections are based on assumptions that do not include improved conservation and more efficient usage of water resources in the region. For example, Las Vegas has done a better job of controlling water demand in a desert community than Washington County has done to date. In addition, the population projections are based on present trends which might not be realized depending on the US economy, increased cost of living estimates for the area for water, power, land use, taxes, etc.*



**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority. The area's hot, arid climate coupled with high tourism and a high number of second homes drives the per capita use of water up but additional conservation is achievable.**

**John C. Browne Comment 2:**

*The cost projections for the entire project are NOT realistic. I was involved in many large construction projects over my career, and what I have seen to date for this project would not pass what we called the Ho-Ho test. The projections are simply wild guesstimates without a firm basis. I strongly believe that state MUST do due diligence on the costs by bringing in independent cost evaluators including economists, bankers, civil and electrical engineers, and professional project managers. Without such an independent cost estimate, the citizens of Washington County will be at the mercy of pipeline advocates who stand to profit from the project, including water resource managers, land developers, and local politicians.*

**UDWRe Response:**

**Final Study Report 10 – Socioeconomics and Water Resource Economics contains updated estimates of the project cost.**

**John C. Browne Comment 3:**

*The viability of the Colorado River must be evaluated on both an historical basis as well as a projected basis with ALL demands on the river's water taken into account plus projected climate changes possible. There are excellent system analysts who could develop a realistic model of the Colorado River basin that would show the impact of the various parameters.*

**UDWRe Response:**

**Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections. The BOR basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report.**

**As stated in Study Report 18 Surface Water Resources, holding depletions (demands) at a constant 2015 level isolates the effect of adding a new project (Lake Powell Pipeline) to the mix of existing and reasonably foreseeable depletions in the Colorado River System.**

**John C. Browne Comment 4:**

*The costs to Washington County residents MUST be clearly stated so that residents can understand what increases in water rates, property taxes, etc. that they are likely to see. This is an important issue since most people are not currently concerned about water costs, which are lower than other parts of the US. However, if this is not clearly explained many people will not understand the impact until it is too late for them to object.*

**UDWRe Response:**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**John C. Browne Comment 5:**

*Lastly, this pipeline project will have such a large impact on southern Utah that the citizens of Washington County should be given the chance to VOTE on the project via a referendum or similar process so that the decision is not solely dependent on politicians who can be influenced by land developers and vested interests. This area has long been known for its “old-boy” politician-developer network and the people deserve to be part of the process.*

**UDWRe Response:**

**Your comment has been noted.**

**Christy Lueders Comment 1:**

*First of all, there is only very weak effort towards conservation in the St. George area. There is SO much more that could be done to discourage the waste of water. This is the desert not the east coast yet many people landscape as though it is the east coast. I understand that government officials are reluctant to tell people that they must landscape in a xeriscape manner but they could encourage it by pricing water in such a way that people stop planting large lawns. Other desert cities have had some success in reducing water usage – this area needs to learn from them. Water is routinely wasted here.*

*It is frustrating not to be able to get solid facts about water usage. I have heard that this area is the highest user of water per residential user of any southwest city. Water district personnel dispute this. Is that true or not? That should be easily substantiated once and for all.*

*There is tiered pricing in place but the cost is far too low. City and county managers need to raise the direct cost of water. Water is a precious commodity, especially here in the arid west. To plan on building a pipeline when we have not seriously worked on reducing water usage is crazy.*

*Second, the cost of the pipeline is not clear. The officials won't even give a definite range of cost including the borrowing costs. They should be more transparent about this. But it sounds like it will be prohibitively expensive. We cannot in good conscience saddle the future residents with this cost. I would rather see population growth limited if necessary.*

*Third, I question whether the Colorado River will provide the water that the proponents of the pipeline are counting on. Scientists foresee lower flows in the future. What a folly it would be to build the pipeline and then not have the water flow.*

**UDWRe Response:**

**The region benefiting most from the proposed LPP Project already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**The LPP Project will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

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**(1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**

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**(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**Bureau of Reclamation studies demonstrate that there is sufficient supply to meet the LPP Project allocation. All Reclamation studies take the LPP Project allocation into account. Therefore, the impact of the LPP Project is not in addition to, but rather already included, in those projections.**

**Carolyn Borg Comment 1:**

*I believe that there are a number of significant deficiencies in what the DWR has provided to FERC.*

*For example, the DWR is still using water needs projections for the LPP that a Utah Legislative Auditor General determined are seriously flawed. In addition, DWR studies have yet to disclose the full costs of the LPP including interest, operations and maintenance. How can the true cost/benefit relationship be judged when full costs are not known? Indeed, 21 Utah university economics professors released a letter to Utah officials raising serious questions about the LPP's financial feasibility and concerns that excessive increases in impact fees and water rates could have crippling local economic impacts.*

*Less expensive alternatives to the LPP such as better water management, greater emphasis on conservation and more effective use of existing supplies are not fully considered in the studies. The "No Lake Powell Water" alternative is clearly biased and extreme. It is intended to make the LPP build alternatives look more attractive. However, such bias is not appropriate or permissible as NEPA analysis must be objective, fair, and thorough. For example, the contention that water conservation would stop landscape sprinklers, and thereby reduce groundwater recharge returns to the Virgin River, with harmful effects on aquatic and riparian species, is ridiculous. Efficient sprinkler systems should deliver moisture to the top soil horizons but are not the type of sustained flooding that could effectively recharge groundwater or sustain dependent river flows.*

*The Western Resource Advocates submitted a detailed "Local Waters Alternative" that was basically ignored by the DWR and LPP proponents. This would be a much more realistic and feasible alternative to the LPP build alternatives. Removing property tax subsidies to the water districts, and instituting tiered water pricing, would use market signals to greatly reduce water demand and thereby eliminate the alleged need for the LPP.*

*Finally, climate experts predict more prolonged droughts in the Southwest due to climate change and these are likely to greatly reduce Colorado River flows and the storage behind the Glen Canyon Dam in Lake Powell. Utah should not gamble billions of dollars on the LPP because there may not be sufficient water in the future to fill it or to charge for water to repay the loan by all Utah taxpayers.*

#### **UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Property taxes are used by WCWCD for general public benefits including endangered species programs, watershed protection efforts, water conservation programs, programs designed to proactively protect ground water resources from contamination, seed money for new project planning, including preliminary environmental analysis and efficiency reviews, grant programs to local water companies and municipalities in the service area. Some portion of property tax revenues supports facilities that provide recreational benefits.**

**Bureau of Reclamation studies demonstrate that there is sufficient supply to meet the LPP Project allocation. All Reclamation studies take the LPP Project allocation into account. Therefore, the impact of the LPP Project is not in addition to, but rather already included, in those projections.**

**Refer to the discussion regarding *The Local Waters Alternative* at the end of the response to Andrew Kramer Comment 5.**

**While the CRSS modeling is intended for comparison between alternatives rather than as a predictor of exact Lake Powell pool elevations, the intake elevation of the Lake Powell Pipeline would be designed to be low enough to receive water under the most dire storage scenarios, as stated in Study Report 19 Climate Change.**

**Christina Gorzalski Comment 1:**

*Readdress the No Lake Powell pipeline alternative. This alternative was presented in a very negative manner. A realistic plan of water conservation and use of current and future water sources should be presented. In the Revised Air Quality Study Report the Summary Description of the No Lake Powell Water Alternative states “The No Lake Powell Water Alternative would involve a combination of developing remaining available surface water and groundwater supplies, developing reverse osmosis treatment of existing low quality water supplies, and reducing residential water use in the WCWCD service area. This alternative could provide a total of 86,249 acre feet annually to WCWCD and KCWCD for M & I use without diverting Utah’s water from Lake Powell.” This information was presented near the end of the LPP. Information presented prior to this on the NLP Alternative appeared heavily biased against the choice. Washington and Kane County residents need accurate information in order to make an informed choice.*

*The Revised Draft Study Climate Change Report information casts serious doubts on the viability of Lake Powell as a reliable water source for the future. This information, again at the end of the proposal should be read by every person who will be paying for the LPP.*

*New power transmission lines will impact the visual resources of the area. A cut through the Cockscomb although painted in a matching color to blend in with the rock, will still be a permanent disfigurement.*

*Provide further information on the impact the LPP would have if the Southern alternative is used and the Kanab Creek ACEC is crossed.*

**UDWRe Response:**

**While the CRSS modeling is intended for comparison between alternatives rather than as a predictor of exact Lake Powell pool elevations, the intake elevation of the Lake Powell Pipeline would be designed to be low enough to receive water under the most dire storage scenarios, as stated in Study Report 19 Climate Change.**

**Jerry Unruh Comment 1:**

*I am writing in strong opposition to the Lake Powell Pipeline to Utah. First, it seems absurd to construct a pipeline when the Bureau of Reclamation has admitted that Lake Powell may well go dry. In fact there have been suggestions that would purposely drain Lake Powell to protect Lake Mead. This is, of course, due to the fact that the Colorado River is already over committed and this pipeline would simply make the issue even worse.*

*The need for the pipeline is apparently based on flawed data. Oddly enough, that data comes from a legislative audit that concludes state water managers have no real idea how much water is being used across Utah so the projection that developed supplies will be exhausted by 2040 is not*



*reliable. How can this sort of money and the resulting environmental damage be committed to when there is no idea of the real need?!*

*The studies to justify the pipeline do not sufficiently consider the impact of Climate Change on current and projected flows of the Colorado River. Virtually all legitimate studies indicate climate change will reduce the flow of the Colorado River. This issue, along with further demands on the river, lead to the possibility of Lake Powell going dry. Also, the studies do not sufficiently consider the negative impact on the Grand Canyon ecosystem of draining 28 billion gallons of water out of the Colorado River each year.*

*Finally, all of the Colorado basin states, not just Utah, must come to the realization that water in the Southwest is a limited resource. The only realistic ways to deal with water issues are better management including conservation, efficiency of use, reclamation of water, etc. These are all less expensive alternatives to the pipeline but, more importantly, are the only approaches that make sense in a time of diminishing Colorado River water supply. Governments and people in the West need to recognize that water is a finite and limiting resource and act accordingly. My wife and I walk our talk on this issue. Our 15- year average water use is about 74 gallon/day and lately we have decreased that to about 60-65 gallons/day. We are a 2-person household and since the the average household size in the U.S. is 2.5 persons, there is no reason that households need to consume more than about 100 gallons/day. Of course, agriculture is the primary use of Western water and here too are potential savings of at least 50%.*

#### **UDWRe Response:**

**Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections. The BOR basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report.**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Agricultural conversion in Utah occurs on a free-market basis, and will supply some water as the land is developed for other purposes; however, water entities must work within current Utah water rights law protecting water right owners as supplies are transferred, conserved and developed to meet future demands.**

**While the CRSS modeling is intended for comparison between alternatives rather than as a predictor of exact Lake Powell pool elevations, the intake elevation of the Lake Powell Pipeline would be designed to be low enough to receive water under the most dire storage scenarios, as stated in Study Report 19 Climate Change.**

### **Molly Taylor Comment 1:**

*Less expensive alternatives to the pipeline such as better water management, greater emphasis on conservation and more effective use of existing supplies must be included fairly and without bias when analyzing the pipeline.*

*The studies do not sufficiently consider the impact of Climate Change on current and projected flows of the Colorado River and its ability to supply water for the pipeline.*

*The studies do not sufficiently consider the negative impact on the Grand Canyon ecosystem of draining 28 billion gallons of water out of the Colorado River each year.*

### **UDWRe Response:**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**The BOR basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report.**

**The data shows that downstream releases at Glen Canyon Dam will not be impacted and therefore the Grand Canyon's ecosystem will not be negatively impacted by the LPP.**

### **Vicky Brandt Comment 1:**

*Please stop this disastrous pipeline project. It would drain another 28 billion gallons of water out of the Colorado River annually, and the Colorado River is already stretched to the breaking point -- taking more water out of the river to subsidize growth and waste in Utah's desert is nonsensical.*

*First, and most importantly, less expensive but far more sustainable alternatives to the pipeline such as better water management, greater emphasis on conservation and more effective use of existing supplies must be included fairly and without bias when analyzing the pipeline.*

*Second, all the costs of the pipeline, including financing, operations and maintenance--and the costs to the ecosystem, which are currently being externalized -- should be clearly presented. The studies do not sufficiently consider the negative impact on the Grand Canyon ecosystem of draining 28 billion gallons of water out of the Colorado River each year. The studies also do not consider the impact of Climate Change on current and projected flows of the Colorado River and its ability to supply water for the pipeline.*

### **UDWRe Response:**

**Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional**

population, multiple strategies, including conservation, will need to be implemented simultaneously.

The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.

The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:

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**(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

#### **Andrew Kramer Comment 1:**

*If a private corporation was responsible for building and operating the proposed Lake Powell Pipeline (LPP) and the CEO asked shareholders to approve the project based on the information supplied to date by the Utah Division of Water Resources (DWR), FERC and the Washington County Water Conservancy District (WCWCD), the shareholders would call "foul" and most likely demand the resignation of the CEO and others involved in the planning process.*

*Why? Because projects of this magnitude with their considerable cost and far reaching consequences, private ventures require accurate, realistic data; comprehensive financial information; sound decision making based on reliable factual information: unbiased, realistic examination of alternatives; a determination of risk-reward ratios; the best expert advice available; and an informed public.*

*Unfortunately, studies by the DWR and FERC, and proposals made by the WCWCD are inadequate and often incomplete and misleading. Since its inception, beginning with inflated population projections skewed to exaggerate need for the LPP, these studies and proposals have been biased in support of development interests, those who are promoting the pipeline, at the expense of fact-based, rational decision making. So we "shareholders", the water users in Washington County and all taxpayers in Utah who may be asked to pay for the pipeline, have every right to call "foul" and demand reliable information.*

*For example, after eight years and some \$27 million in DWR studies, we still don't have accurate cost estimates for construction, operations and maintenance of the proposed pipeline. Nor do the studies show reasonable means of financing the project and how the debt would be repaid. The*

*WCWCD has not yet provided Washington County residents with accurate information about increased water rates, impact fees, property tax impacts and other surcharges. Most importantly, the critical question as to whether alternative solutions would suffice in lieu of the pipeline has not been fully addressed by these agencies.*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

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**(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**Andrew Kramer Comment 2:**

*Per the economists' analysis, depending on the up-front costs of the LPP (\$1.4 billion low, \$1.8 billion high), impact fees would be raised to \$13,630 per connection (low) to \$14,514 (high). Water rates would increase by 576% (low) to 678% (high). In addition, property taxes (which currently subsidize water rates) would need to be collected near the maximum allowed by state law. Consequently, with these high water rates, demand would decrease 62% (low) to 64% (high) to the point where much of the LPP water would go unused. (Note: The DWR study did not account for decreased use and decreased revenues, a major oversight.) In other words, building the LPP would result in significant water conservation. Given this scenario, it makes sense to avoid building the LPP altogether and initiate conservation measures beginning now.*

**UDWRe Response:**

**Refer to the responses to Comments 9 – 15 from Gail Blattenberger located in the General Comments section which discuss the above referenced economists' study.**

**Andrew Kramer Comment 3:**

*The WCWCD claims that if the pipeline is not constructed the local economy will suffer. In fact, the opposite is true. Per the economists' study, "While impact fees might appear to fall only on*

*newcomers, free market competition for housing development among surrounding counties means that the District's impact fees will depress the value of Washington County land relative to its neighbors' land and relative to its current value." Further, increases in water rates would likely slow the rate of population growth in Washington County resulting in decreased income to pay back the bond and decreased income from water usage. "To avoid this and maintain the desirability of homes and building lots in Washington County in the face of increases in water rates, the price of real estate would have to fall." Lower property values would result in less property taxes being collected (which subsidize water rates) "forcing water rates to go up more than anticipated and forcing real estate values to go down more than anticipated."*

**UDWRe Response:**

**Refer to the responses to Comments 9 – 15 from Gail Blattenberger located in the General Comments section which discuss the above referenced economists' study.**

**Andrew Kramer Comment 4:**

*Per the 2015 Legislative Audit of the DWR, Washington County has some of the highest water use in the nation and its current conservation goal would still put water use "above nearly every similar community in the West." Unfortunately, to exaggerate the need for the LPP its proponents refuse to promote realistic conservation. For example, per the Southern Nevada Water Authority (SNWA), the Las Vegas region - which has climate similar to Washington County - reduced its gallons per capita per day (GPCD) by 43% between 2002 and 2014 and plans to reduce water use to 199 GPCD by 2035. By contrast, the Legislative Audit noted the WCWCD plans to reduce water use to 292 GPCD by 2060 (the most optimistic estimate found in other documents is a scant 18% to 241 GPCD by 2060). This compares with cities such as Phoenix that uses 178 GPCD and Los Angeles that uses 132 GPCD.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**It is difficult to find relevant per capita usage and conservation goals comparisons due to differences in community dynamics, climate, and calculation methods. Per the cited example, Southern Nevada Water Authority (SNWA) discounts water that is returned to Lake Mead as wastewater from its per capita usage (see, [https://www.snwa.com/ws/recycled\\_returnflow.html](https://www.snwa.com/ws/recycled_returnflow.html)).**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards**



**an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Andrew Kramer Comment 5:**

*Further, the Audit found that Washington County has sources of water supply that were not included in the studies. In addition, as residential development grows, water formerly used by agricultural operations is transferred to municipal uses resulting in a net gain of supply. Also, more aggressive conservation would further extend supply. If these measures were enacted, the auditors noted “the need for the LPP becomes questionable”. Even more conclusively, as demonstrated in The Local Waters Alternative, a study by Western Resources Advocates, using these measures makes the LPP unnecessary.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for the LPP Project go into far more detail than statewide or regional plans. The commentor’s assertion: “If these measures were enacted, the auditors noted ‘the need for the LPP becomes questionable’” cannot be found anywhere within the text of the audit.**

**The LPP Project is not intended to replace potential additional available water via conservation, but to augment that water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies will need to be implemented simultaneously.**

**The region benefiting most from the proposed LPP Project already met the Governor’s 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Western Resource Advocates (WRA) offers *The Local Waters Alternative* (LWA) as a “reasonable and realistic” substitute to the Lake Powell Pipeline (LPP) Project. This alternative option:**

- Does not meet the future water needs in Washington County**
- Requires significantly more funding, regulation and resources than the proposed LPP project**
- Does not add to or diversify the region’s water supply**
- Mandates extreme conservation measures**
- Creates an extension of power of the Washington County Water Conservancy District’s (WCWCD) current role to allow the district to dictate and enforce municipal ordinances**
- Overestimates available local supplies**
- Underestimates financial, social and environmental costs**
- Requires forfeiting of more than half the county’s agricultural lands**

- Eliminates drought protection buffers
- Compromises river flows and threatens endangered species habitat
- Does not account for potential climate changes
- Fails to consider that future water demand may exceed expected use as a result of underestimated population and/or economic growth or climate variations
- Omits the local and state economic benefits of a more plentiful, reliable water supply

This paper will explain the shortcomings of the report's four central conclusions and demonstrate that it greatly underestimates the costs and social effects of its proposed actions.

**WRA Fallacy #1: *The Local Waters Alternative* more than meets the future water needs of Washington County.**

The premises used to reach this conclusion are discussed later in this paper, but even if they are assumed to be correct, the alternative fails to offer reliability against drought and climate change, consider its environmental effects on the Virgin River, and provide future water supplies beyond 2060.

**Diversity and Reliability**

The LPP project provides diversity and reliability by introducing a new and more secure water source to Southern Utah. The project also allows Utah to put a small portion (approximately 6 percent) of its Colorado River water allocation to beneficial use.

The LWA requires Washington County be solely dependent on the Virgin River watershed and fails to address the vulnerabilities in the face of prolonged drought and climate change that come with having all sources in one watershed. The only protection against drought mentioned in the report is potential temporary agricultural water leases. This minimal supply would also come from the Virgin River, and during recent drought years, agricultural users have been hit the hardest.

**Environmental Effects on the Virgin River**

Many species in the Virgin River depend on return flows, and the elimination of agriculture and reduction of outdoor watering proposed by this option will substantially impact the river.

The LWA does not address these environmental consequences in their report.

**Future Water Supplies**

The LPP project delays reverse osmosis treatment of agricultural water and difficult conservation practices beyond 2060 when technological advances are likely these options more economically feasible.

The LWA recommends converting more than half of the county's agricultural lands to produce future water supplies (in contrast to public opinion as noted in the Envision Utah survey) and offers a range of potential yields. The low-end yield estimate barely meets the conservation-reduced demand in 2060. Extensive elimination of agriculture would offer some surplus, but once that supply is exhausted, this alternative provides no other options. It is highly unlikely growth will stop in 2060.

The LPP Project guards against drought and climate change; balances environmental water needs; allows agricultural conversion to occur organically; and pushes costly, technically-difficult projects into the future. The LWA does not.

**WRA Fallacy #2: Implementation of reasonable new conservation measures would substantially lower future water demand projections.**

The LPP project assumes Washington County will meet its conservation goals, which are amongst the most aggressive in the state of Utah, through a series of programs, rebates and other activities as outlined in WCWCD's 2015 Water Conservation Plan.

The LWA would require indoor water use be limited to 35 gallons per capita per day (gpcd), outdoor use be limited to 55 gpcd, and commercial, institutional and industrial uses be limited to 86 gpcd. These reductions fall well below national averages and have not been achieved in any comparable municipality over an extended timeframe.

**Per Capita Usage Comparisons**

The LWA attempts to cast Washington County's per capita water use as egregious by comparing it with other municipalities which:

- Use different accounting practices to calculate gpcd
- Vary in climate, population and community dynamics

The report compares Washington County's system-wide potable use and residential use against 30 cities in Colorado, Arizona, New Mexico, and Nevada. The data for the cities in Arizona and Colorado come from reports, also written by WRA<sup>1</sup>. Both reports explain that system-wide use is affected by the makeup of each community. The report for Arizona reads:

"By contrast, system-wide potable use per capita is not a relevant comparison from one community to the next because cities have very different residential, commercial, and industrial uses of water. In this case, we compare the trend in system-wide use at each utility to evaluate if individual cities are becoming more efficient in their water use over time. <sup>29</sup>"

Despite this statement in its own report, WRA compared Washington's County system-wide potable use with these 30 cities. WRA claims in these same reports that residential use is more comparable; however, there are several factors that can have measurable impacts on residential per capita use, especially the outdoor watering component. For example:

- **Population density.** The report compares per capita use in Washington County against city-wide per capita uses. Higher population densities result in reduced landscaped area. Most cities listed have higher population densities than Washington County's most populous city, St. George.
- **Temperature, precipitation, elevation.** The report compares cities that have different seasonal and annual temperatures, receive varying amounts of rain during different times of the year, and are at higher elevations than populated area of Washington County. Identical landscapes would require more water based on many of these factors.
- **Calculation method.** Cities listed water use in Colorado and Arizona come from WRA reports and were calculated in a way that results in lower per capita use based on second-home ownership while Washington County's use was calculated in a way that results in higher per capita use based on second-home ownership.
- **Year of data collection.** The per capita use data for each city was gathered in different years. Whether or not that year were particularly dry or wet would impact outdoor watering.

The report argues that Washington County's high percentage of second homes and hot climate are not valid reasons for increased water use but fails to make an effective case. Close to 30 percent of Washington County's residential properties are second homes. The Utah Division of Water Resources calculates per capita use as the water used in a service area divided by the permanent resident population of that area whereas the cities listed in the LWA are calculated based on the number of connections.<sup>3</sup>

In response to Washington County's claim that its high percentage of second homes impacts residential usage, the LWA states:

"It should be noted that none of these cities make similar adjustments, even though some of them also have seasonal populations (e.g. university students, second homes, etc.)."<sup>4</sup>

Adjustments would not be necessary for the per capita use estimates in the LWA because second-home owners were considered part of the permanent population, and their presence would yield a lower per capita use because part-time residents use less water. In the 2015 Water Needs Assessment, second-home owner use is included in the system-wide per capita use number, but it was segregated out from permanent residential use to make comparisons more balanced.

The LWA compares Washington County's average temperature, rainfall, and evapotranspiration rate with that of Albuquerque, Las Vegas, and Tucson to show that the communities have similar climates and thus should have similar usage rates. These parameters were compared annually but have a greater impact during the summer months when outdoor watering occurs. The report also pits a county against larger cities with population densities more than double St. George. Table 1 shows the data provided in the WRA report. Table 2 shows data for the same cities compared to St. George during the summer months only. System-wide use has been eliminated from the tables as, as admitted by WRA, it "is not a relevant comparison" and residential use has been updated to exclude usage by second homes. Population density and indoor use have also been added for reference.

**Table 1. Comparison from *The Local Waters Alternative*.<sup>5</sup>**

Entity	Total Res. Use (gpcd)	Outdoor Use (gpcd)	Avg. Annual Temp (°F)	Avg. Annual Precip. (in)	Annual ET (in)
Albuquerque	110	42	56.0	8.9	38.1
Las Vegas	174	105	68.0	4.5	74.8
Tucson	114	57	68.4	12.0	58.0
Washington County	179	109	61.8	8.0	55.0

**Table 2. A more relevant comparison.**

Entity	Total Res. Use (gpcd)	Outdoor Use (gpcd)	Indoor Use (gpcd)	People per square mile <sup>6</sup>	May – Sep. Avg. Temp (°F) <sup>7</sup>	May – Sep. Avg. Precip. (in) <sup>8</sup>
Albuquerque	110	42	68	2,908	72.6	5.3
Las Vegas	174	105	69	4,298	84.5	1.2
Tucson	114	57	57	2,294	82.2	6.3
St. George	150	88	62	1,035	79.6	1.5

Direct comparisons of the per capita usage data in Table 2 should not be made for reasons previously stated. It is unknown how the Las Vegas per capita usage was calculated, as WRA did not cite this data, and the data for each community were collected in different years. However, it should be noted, Washington County’s residential usage is not out of line with what would be expected when housing density and precipitation and temperature during irrigation season are considered.

**Recommended Conservation Goals**

The LWA depends on reducing residential use to 90 gpcd and commercial, industrial, and institutional (CII) use to 86 gpcd - 42% and 49% decreases from 2010 use estimates, respectively.<sup>9</sup> The report minimizes the effort and costs associated with making these reductions, indicating the following actions would sufficiently achieve these goals:

- Improve existing block rate structure
- Meter all secondary connections
- Embed water efficiency into public spaces and new developments
- Implement smart growth principles

To attain 90 gpcd, the LWA recommends an indoor use of 35 gpcd and an outdoor use of 55 gpcd. The report cites two short-term studies in which small sample sets of motivated participants achieved indoor rates near this goal, which is posited as “not only achievable, but conservative,” and yet the report fails to discuss how to implement a requirement that all new homes be built and all existing homes be retrofitted to EPA WaterSense standards.



The WCWCD does not have authority to require this, and the additional costs that would be borne by homeowners; it is therefore speculative to assume that such a requirement would be enacted by any municipality. It should be noted based on the information provided by WRA (above in Table 2), indoor use rates in Albuquerque, Las Vegas and Tucson are not close to this level.

WRA insists that the elimination of outdoor watering in the No Lake Powell Water Alternative is unnecessary, and yet the LWA only allows 55 gpcd outdoor residential watering –less than the reported outdoor watering rate in Tucson, which receives nearly 5 inches more rain during summer months and has double the population density of Washington County. In order to achieve the 55 gpcd goal, the report gives an example of potential landscaping for a 6,500 square foot yard, which is smaller than most master planned areas. Turf would be limited to 600 square feet with drip irrigation and extensive areas of hardscape. Because drip irrigation is expensive to retrofit and maintain, it would again be a challenge for this requirement to be universally implemented in Washington County.

A 49% reduction of CII usage would require actions and costs not mentioned or accounted for in the LWA. The report justifies setting CII usage at 86 gpcd by writing “this is a reasonable target because Washington County’s future system-wide use would be at the low-end of how cities are using water ‘today.’” As explained previously, WRA noted in other reports that comparisons between system-wide capita usages are not relevant because CII sectors vary so much across communities. In Washington County, more than 50 percent of properties are commercial and have been for more than 100 years.<sup>10</sup> Washington County receives an estimated 5.6 million tourists annually, has a substantial part-time population, a growing manufacturing sector, and is home to a 245-bed hospital, regional airport and university. Such a drastic reduction in usage deserves a more thorough analysis than what is given in the LWA, especially considering the potential economic consequences of this type of requirement.

Conservation is essential in meeting future water needs in Washington County. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Additional conservation is encouraged by WCWCD; however, the current conservation goals are prudent for planning and are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County. The water conservation goals in the LWA are not.

**WRA Fallacy #3: Reuse and agricultural water transfers can provide significant amounts of new water supply to meet projected water needs.**

The LWA acknowledges that conservation alone will not meet the needs of Washington County’s projected population. The report also relies upon an estimated 16,900 acre feet per year of wastewater reuse water and up to 35,200 acre feet per year of agricultural water to bridge the gap between supply and demand. While the reuse water estimate in the report is realistic and in step with the Water Needs Assessment (WNA)<sup>11</sup>, the report overestimates the conversion of agricultural water and neglects to account for the fact that advanced treatment will be required to meet the standards for outdoor use.

Return flows contribute to available water supplies in the Kanab Creek/Virgin River drainage basin. Downstream agricultural users of the Virgin River are especially reliant

upon the return flows of upstream users. Agricultural users also routinely face shortages during drought years; so even if the State Engineer were to grant 100 percent conversion of agricultural water rights to municipal water rights, it is unlikely the full allocation of water would reliably be there for use.

The Water Needs Assessment projects an increase in supply from agricultural conversion by 2060 of 10,080 acre-feet per year in Washington County, with a 90 percent reliability. This estimate includes conversion of acreage on the outskirts of St. George and Washington that is most likely to be developed. Coincidentally, this acreage is located downstream on the Virgin River, and the full conversion of the associated water supplies to municipal use by the State Engineer is likely as there are no users dependent on return flows. The conversion of additional agricultural land is less probable as remaining acreage is in more rural areas that are not anticipated to see the same population increases and are located upstream in the watershed, so full conversion to municipal supply is less likely to be approved.

Agriculture is valued by the local communities. In 2014, a state-wide, community visioning project called Envision Utah surveyed more than 50,000 Utahns on several topic areas, one of which was agriculture. The survey found that Utahns are willing to:

- Cut back on watering lawns and gardens to ensure there is enough water for agricultural,
- Avoid building on farmland, and
- Spend more money to bring non-agricultural water to urban areas.<sup>12</sup>

As noted in the Water Needs Assessment, much of the water projected to become available from agricultural conversion is brackish and will require advanced treatment, such as reverse osmosis, or blending with other supplies to make it suitable as a potable or even secondary water supply. Under the LWA, there would be no additional supplies to blend the water with. Acknowledgement of water quality issues is glossed over in Appendix E of the report, and surprisingly, treatment costs are omitted.

**WRA Fallacy #4: *The Local Waters Alternative* costs significantly less than the proposed LPP.**

The cost estimate reported in the LWA omits or underestimates substantial costs that would be incurred by implementing the alternative. Infrastructure expenses alone, omitting substantial social and environmental costs, would exceed the estimated costs of the LPP project.

The following costs were neglected in the LWA:

- Capital and operating expenses of reverse osmosis treatment of agricultural water to meet potable or secondary water quality standards
- Additional storage needed to utilize reuse water
- Additional secondary distribution systems to utilize reuse water
- Installation of meters on all secondary water connections

The following costs were underestimated in the LWA:

- **Level of conservation required**
  - o All homes constructed or retrofitted to EPA WaterSense standards
  - o Installation and maintenance of drip irrigation and hardscape
  - o Increased power costs caused by heat island effect from removal of landscape
  - o Enforcement of restrictions and requirements
  - o Undescribed actions required to reduce CII use 49%

The LWA also has social and environmental costs associated with it:

- Increased government regulation
- Induced reduction of agriculture
- Reduced environmental flows in the Virgin River
- Less reliable, sole-source water supply

### **Conclusion**

The LPP Project provides a more abundant and reliable water supply; protects environmental and agricultural resources; delays expensive, difficult projects; contributes to the local and state economy and is the most cost effective option.

<sup>1</sup> Western Resource Advocates. *Arizona Water Meter: A comparison of water conservation programs in 15 Arizona communities*. October 2010. Available at <http://westernresourceadvocates.org/publications/arizona-water-meter/>.

Western Resource Advocates. *Front Range Water Meter: Water conservation ratings and recommendations for 13 Colorado communities*. November 2007. Downloaded March 20, 2013. No longer accessible online.

<sup>2</sup> Ibid, p. 43.

<sup>3</sup> Ibid, p 43. “Single-family residential use is the total volume of water sold to the SFR sector, divided by the SFR population, divided by 365 (days in a year). Single-family residential population in each community was determined by multiplying the number of SFR accounts and the number of persons per household (taken from the U.S. Census). For providers that do not separately track SFR use from other residential water uses, total residential water sales were used instead.”

<sup>4</sup> Nuding, A. *The Local Waters Alternative to the Lake Powell Pipeline*. 2013, p 13.

<sup>5</sup> Ibid, p 43.

<sup>6</sup> US Census Bureau. *2010 QuickFacts*. Available at [www.census.gov](http://www.census.gov).

<sup>7</sup> Cohen, M.J. *Municipal Deliveries of Colorado River Basin Water*. June 2011.

<sup>8</sup> Ibid

<sup>9</sup> Utah Division of Water Resources. *Draft Water Needs Assessment*. 2015.

<sup>10</sup> Washington County Assessor. Master data file. Accessed December 9, 2014.

<sup>11</sup> A graph from *The Local Alternatives* report was updated to include over 45,000 acre-feet per year of supply from wastewater reuse in Amelia Nuding’s February 29, 2016 letter addressed to the Federal Energy Regulatory Commission. This amount of wastewater will not be available, especially if indoor residential use is decreased to 35 gpcd.

**Brent Layton Comment 1:**

*Well planned and successfully executed infrastructure projects in Utah are critical to the short and long term success of the state. This week you will be voting on SB80/HB257, which speaks to infrastructure. I urge you to reject this version of the bill for the following reasons.*

- 1. The cost and funding for the Lake Powell Pipeline remain unclear. How the project will be financed; what are the tax implications for the resident of Washington County; and what the total cost of the project over what time period time have all yet to be determined. The residents who will undoubtedly bear the burden of supporting this project deserve specific, concrete information about what they will be asked to pay before proceeding with the proposed plan.*
- 2. Washington County's consumption per person per day of 328 gallons is way beyond what is needed and clearly indicates waste. Many residents of this county are operating on the assumption that our resources are unlimited. Education in the form of aggressive conservation efforts and local water management is a logical first step in changing behavior. Like adopting recycling in the community, changing habits related to water usage can be challenging, but ultimately less expensive and ultimately making better use of limited water resources in a desert environment.*
- 3. Development in Washington County is a delicate balance. While it's understandable that many people have been drawn to this area because of its beauty and climate, we take the risk of destroying the very thing that draws people to our community by pursuing unrestrained development.*

**UDWRe Response:**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

- (1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**
- (2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**
  - (a) the delivery of developed water to the district during the first 10 years after the project is completed; or**
  - (b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**
- (3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**
- (4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards**

**an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**Clara Evans Comment 1:**

*Utah should be able to demonstrate they are using their existing water supply as efficiently as possible before being granted additional water rights. If they are not managing their water efficiently then they should be required to make necessary improvements before their request would be considered.*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**Lisa Rutherford and Paul Van Dam Comment 93:**

**Closing Comments**

*As noted several times in these comments, Washington County Water Conservancy District in there 2010 and 2011 “Water Line” publications asserted they can provide 105,000 acre feet per year WITHOUT the LPP. Additionally, these study reports show that there are 106,000 acre feet currently stored in Sand Hollow’s aquifer for drought protection and shortage coverage that would help with demand hardening. The state’s audit of DWRe (Applicant) pointed out (Chapter 4) that much agricultural water is not being properly considered for conversion and inclusion in future M&I water. Colorado River flows and subsequent available allocation amount remain uncertain. Costs of the LPP are all over the place and need to be nailed down. Conservation is lacking and usage remains higher than it should be for a desert community. Audits of the Utah Division of Drinking Water and Utah Division of Water Resources (Applicant) show significant problems that need to be resolved before the LPP is approved by FERC. The pumped storage component of the LPP – a required component – appears to be used more for FERC licensing approval than for a component that will actually get funding and be built.*

**UDWRe Response:**

**The 105,000 ac-ft per year potential yield without the Lake Powell Pipeline was derived from the 2011 WNA. This yield included an additional 7,300 ac-ft per year from**



maximizing the existing reuse plant and 10,080 ac-ft per year from agricultural conversion. Both of these supplies require additional storage, and without LPP water to blend with, the agricultural water will be difficult to find uses for. This potential yield was reduced in the updated WNA to correct double counting of secondary sources by the WCWCD and the municipalities which it serves and to reflect a reduced yield from the planned Ash Creek Project.

The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously. The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.

Agricultural conversion in Utah occurs on a free-market basis, and will supply some water as the land is developed for other purposes; however, water entities must work within current Utah water rights law protecting water right owners as supplies are transferred, conserved and developed to meet future demands.

Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections.

While it is true that this project is a water conveyance project, the project includes proposed hydropower facilities. The power generated by the project may support the grid system in several alternative ways. The use of power from the project for project power needs would offset demands on the grid that might otherwise be made by the project. The power generated by the project could be delivered to other power generators or users in the system and offset their demands on the grid. The region that could be affected by these deliveries could extent as far as contract parties' service areas as those contracts may be negotiated after permits for the project are issued. Accordingly, the region may be considered to extend throughout the western United States insofar as the contracted power services for WAPA, Garkane, Page, St. George City, Hurricane City, Dixie REA and Rocky Mountain Power may extend.

**Lisa Rutherford and Paul Van Dam Comment 94:**

*In fact, it appears the Applicant is attempting to take both sides. On the one hand, Applicant asserts that conservation, lower-cost resource development, and rights transfers will be implemented before LPP but then asserts that the pumped storage component – the major energy feature of the project – will require water flowing to achieve the needed energy production. Can Applicant have it both ways?*

**UDWRe Response:**

**Your comment has been noted.**

**Martha Ham Comment 1:**

*I am deeply concerned about indebting Washington and Kane Counties with the Lake Powell Pipeline Project. As I read the Utah Legislative Auditor General's report (May 2015) it clearly states that the data from the water districts and population growth projections are flawed. Yet the Utah State Division of Water Resources is using this faulty information as a basis for planning this massive and extraordinarily costly project.*

*This project puts tremendous pressure on the area to grow at a high rate so repayment of the massive loan (amount which is unclear and the estimates vary dramatically) can be accomplished.*

*The Auditor General's report goes on to state that conservation is a first line approach to accommodating growth in Southern Utah and a reasonable alternative to building the Lake Powell Pipeline. As you well know, we Southern Utah residents have not yet done our part to live in a manner that reflects that we reside in the desert. Our region has a shameless high per person per day use of water and notable low water rates which do not incentivize residents to conserve water.*

*The pressure for the area should be in the arena of water conservation. Resorting to building the Lake Powell Pipeline Project is premature and I am opposed to this project being licensed and moving ahead.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Rebecca Elder Comment 1:**

*According to the Division of Water Resources the data being used to demonstrate and justify the taking this water from Lake Powell and traverse the desert in a pipeline is unsound data. More overview is required. An Environmental Impact study would not back this project up! Risking the Grand Canyon ecosystem, a national gem and the delicately balanced Colorado River System is not in the best interest of our Country. I am not comfortable with risking such irreplaceable river ecosystem.*

*I don't trust that this pipeline is the best alternative for thirsty people. Expensive water projects do not bring about sustainability, but often worsen the problems and decreases supply, plus damage ecosystems. It would surprise me that the Government would be comfortable with such*

*knowledge of the lack of data, proper data and with the natural threats to our national treasures as these. Surely the future people would condemn such action based on bad data!*

*With climatic irregularities and unsettled stormings of such magnitude as we have been experiencing, the aspect of water supply is a critical element. But, in the same breath, deliberate conservation and conscious application of sensible usage levels is called for with great urgency. Conserve every drop possible first, before pulling in more water!! To simply pull water from this system to continue "business as usual" water usage is an unethical approach and will impact the future citizens of this planet. The children of the future deserve a whole system environment and water supply. Nothing less. Thank you.*

**UDWRe Response:**

**The Utah Division of Water Resources has never made the assertion stated in the first sentence of this comment.**

**The data shows that downstream releases at Glen Canyon Dam will not be impacted and therefore the Grand Canyon's ecosystem will not be negatively impacted by the LPP.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Tracy Hiscock Comment 1:**

*I am a long time resident of and taxpayer in Kane County, Utah. I have strong concerns regarding the proposed Preliminary Licensing Proposal (PLP) and Revised Draft Study reports for the Lake Powell Pipeline Project (FERC Project No. 12966) (RDS). We taxpayers have spent \$27 million for these studies and deserve a legitimate analysis of the options for future water supply. I am writing to urge you to include the following issues and factors in the Lake Powell Pipeline Studies.*

*Three independent economic studies by teams of recognized economists have determined that the Lake Powell Pipeline (LPP) project is unaffordable for the residents of both Washington and Kane Counties. The Lake Powell Pipeline Act of 2006 specifies that this pipeline must be paid for by the residents of these two counties. For this reason, extra attention needs to be paid to the financial aspects of this project by including accurate determinations of projected costs, and the costs of less expensive alternatives to the LPP.*

*Despite the fact that the Utah Department of Water Resources (DWR) spent 8 years and \$27 million of taxpayer money on these studies, the following important questions have not been answered:*

**UDWRe Response:**

**Tracy Hiscock Comment 2:**

*- What is the total cost of the Pipeline, including operations and maintenance costs? The amounts in the RDS reports have not been updated, making any economic conclusions in the studies inaccurate. Please update these numbers.*

*The LPP costs quoted in the RDS are artificially low because they do not include the large expense of pump storage and other project features. The final configuration of the pipeline needs to be defined, and an accurate total cost determined.*

*Additionally, the percentage of Kane County Water Conservancy District costs for paying a portion of the overall LPP Project costs is not stated in the studies, making the other projections and conclusions inaccurate.*

*The discussion about the Lake Powell Pipeline must center on its high cost and actual need for the project by 2024. Initial project costs were estimated at \$250 million and have now skyrocketed to over \$1 billion plus interest and future maintenance. Our small communities cannot afford the Pipeline. The cost details of the LPP need to be defined and the local and state financing plans need to be determined in order to adequately discuss the socioeconomic impacts of this project.*

*What is the repayment plan? The PLP's benefit/cost impact analyses do not include financing costs. These costs will be a substantial burden for local taxpayers and water ratepayers. Both the method of financing and the money numbers need to be included in these studies, including how the two counties are to pay the double digit million dollar annual bond payments. The state's obligation and responsibility needs to be spelled out as well.*

**UDWR Response:**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

**(1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**

**(2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**

**(a) the delivery of developed water to the district during the first 10 years after the project is completed; or**

(b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.

(3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.

(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.

A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

### Tracy Hiscock Comment 3:

*- How much will Kane County residents see their costs increase for water rates, property taxes and new construction impact fees? The citizens of Kane and Washington counties have a right to know how much they will pay in higher impact fees, surcharges and taxes for the proposed LPP. Yet, in the eight year study, these questions are not answered.*

*The Kane County Water Conservancy District does not even have a viable plan for paying for its share of the LPP. Without a defined method for financing this large debt, socioeconomic impacts cannot be adequately determined.*

*Again, economists from Utah universities analyzed the impact that \$2 billion of debt would have on residents of Washington and Kane Counties. They found that repaying this debt would require dramatic increases in water rates, impact fees and property taxes—far outweighing the benefits of extra water. In fact, the cost was so prohibitive that when Iron County residents in the state—who were also slated to receive water—learned the true costs of the pipeline, they pressured their elected officials to formally withdraw from the project. Yet, these costs have still not been defined in the proposal studies.*

### UDWRe Response:

**Refer to the responses to Gail Blattenberger's Comments in the General Comments section.**

### Tracy Hiscock Comment 4:

*-What are the alternatives to the Pipeline that are less risky and less expensive? This issue must be addressed in the coming proposal studies.*

*There are far less expensive ways to use local water sources in our counties. Washington County has some of the highest per capita use and the lowest prices for the water in the west. It uses twice as much water as the national average, and an audit has shown that there is already a large surplus of unused water in the county. Far from needing more water, if Washington County*



*simply enacts several proven and meaningful conservation strategies the current supply will provide enough water for the next 45 years—including predicted population growth.*

*Also, in Kane County, a higher priority should be on collecting accurate water use and supply data, becoming efficient in water use first, boosting local water supplies, increasing conservation, creating pricing strategies, and reuse that could result in significant cost savings and provide enough water for growth.*

*The water conservancy districts should be pursuing a strategy of using accurate data and making our area more self-reliant by reducing water demand and developing new and unused water resources locally. These actions could contribute to a more reliable water supplies. Local water sources will deliver southern Utah's future affordably and reliably, without burdening present and future generations with a massive debt and a water supply vulnerable to drought, litigation, political conflict, controversy, and uncertainty.*

*The socioeconomic study and pipeline alternatives studies should address these factors and include a more complete discussion of the impacts of water conservation versus the LPP. The Draft Alternatives Study #22 describes a much more cost effective approach to providing water for Kane County's future by using agricultural water and a water treatment plant. The LPP Studies need to include more financial and practical details on this alternative, especially because the LPP has been found to be unaffordable for Kane County residents.*

**UDWRe Response:**

**The LPP Project is not intended to replace potential additional available water via water conservation, but to augment that water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies will need to be implemented simultaneously.**

**Tracy Hiscock Comment 5:**

*- If the current mega-drought continues, will there be adequate water to fill the pipeline? And, if there is not, how will the costs and losses of such an event be covered?*

*Depending on the diminishing Colorado River for future water supply is unsustainable. Recent reports from the Bureau of Reclamation show that the river is over allocated and flows will continue to decrease. The average demand already outstrips average supplies. Investing billions of dollars into a project that may not produce water in the future is a huge financial risk for all involved. This likely scenario must be considered in any studies of the pipeline's impacts.*

*I believe that the above factors need to be better researched and included in any and all future Studies associated with the Lake Powell Pipeline. Please include them in your upcoming revisions of the Draft Studies.*

**UDWRe Response:**

**Modeling performed by the Bureau of Reclamation and the Colorado River Basin states indicates a low likelihood that the water will be unavailable.**

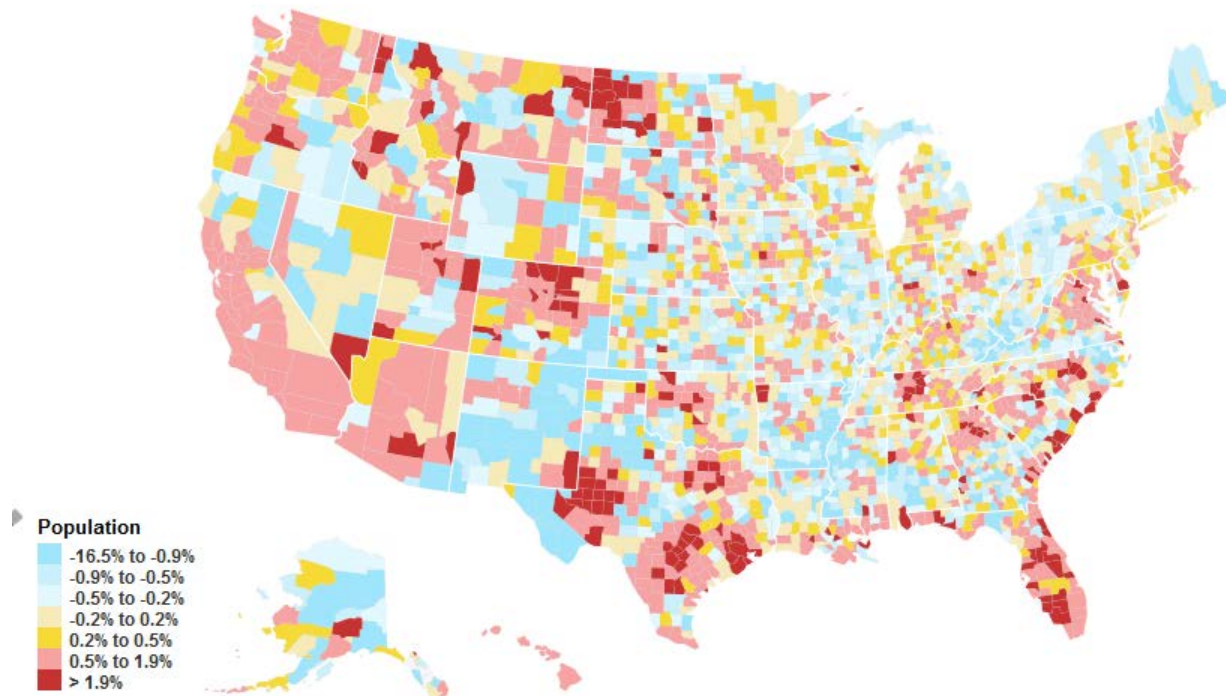
**Gail Blattenberger Comment 1:**

*Washington County Water District's Questionable Water Needs. Based on declining population growth, potential to convert additional agricultural water, potential water conservation savings, and previously unconsidered water sources, Washington County has ample water to serve future populations without participation in the Lake Powell Pipeline.*

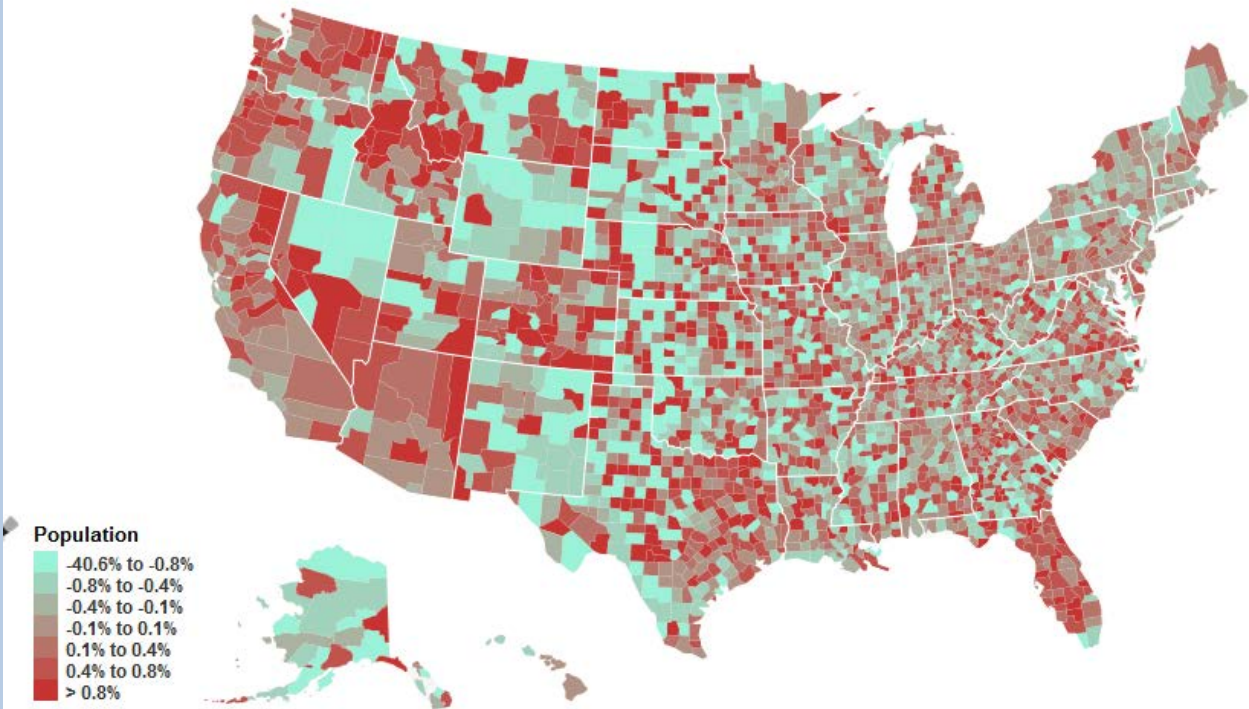
**UDWRe Response:**

Washington County's population growth was 2.9% between 2013 and 2014 (latest data available, see <https://research.stlouisfed.org/fred2/data/UTWASH3POP.txt>, citing the US Census Bureau). This rate of growth was faster than the rate of growth reported for the county during any of the past five years, was faster than the average reported for the state of Utah (1.4 percent) and the United States as a whole (0.7 percent). In fact, when viewed nationally, Washington County reported among the highest rates of population growth; and, among the fastest increasing rates of population growth.

**US Population Growth Rates, By County**  
2013-2014 (latest available)



**Change in Population Growth Rates, By County**  
2012-2013 vs. 2013-2014 (latest available)



The concept that Washington County is going to convert huge amounts of agricultural water use to municipal and industrial uses is also misguided. Certainly, there is some potential for this to occur; however, the proximity, volume, geographic dispersion and quality of that water are all factors, which must be considered and are entirely omitted from the analysis referenced in this comment.

Population in the region is expected to increase by 252 percent according to the Governor's Office of Management and Budget (see, <http://gomb.utah.gov/budget-policy/demographic-economic-analysis/>). Concurrently, developable potable water supplies will increase renewable, reliable water resources by approximately 23 percent by 2020. Washington County has undertaken significant efforts to increase the efficiency of water usage. Washington County has decreased its gallons of water consumption per capita per day (GPCD) by 26 percent from 2000 to 2010 (latest data available from DWRe), surpassing the statewide conservation target. While these efforts have been successful in attempting to stretch the current water resources available to the region, it will not be enough to provide a safe, sufficient and reliable water source into the future. In 2015, the potable water demand in Washington County was approximately 16 billion gallons while the total available water resources for the area will be approximately 26 billion gallons by 2020. By 2060, water demand on its current trajectory is projected to reach 60 billion gallons, leaving a 28 billion-gallon shortage even with the area meeting its water conservation targets.

**Gail Blattenberger Comment 2:**

*Outdated Population Forecasts. The Governor's Office of Planning and Budget (GOPB) 2012 Baseline Population Projections estimates Washington County will grow to 581,731 residents by*

the year 2060, 32.4 percent lower than population projections made by the GOPB in 2005.<sup>1</sup> Since the District's water needs projections rely on these population projections, the more updated data pushes the supposed need for the LPP back over 12 years. The labeled 2006 Population and 2012 Projection with No Conservation lines in Figure 2 on page 3 illustrates the difference between these two different population forecasts on water use.

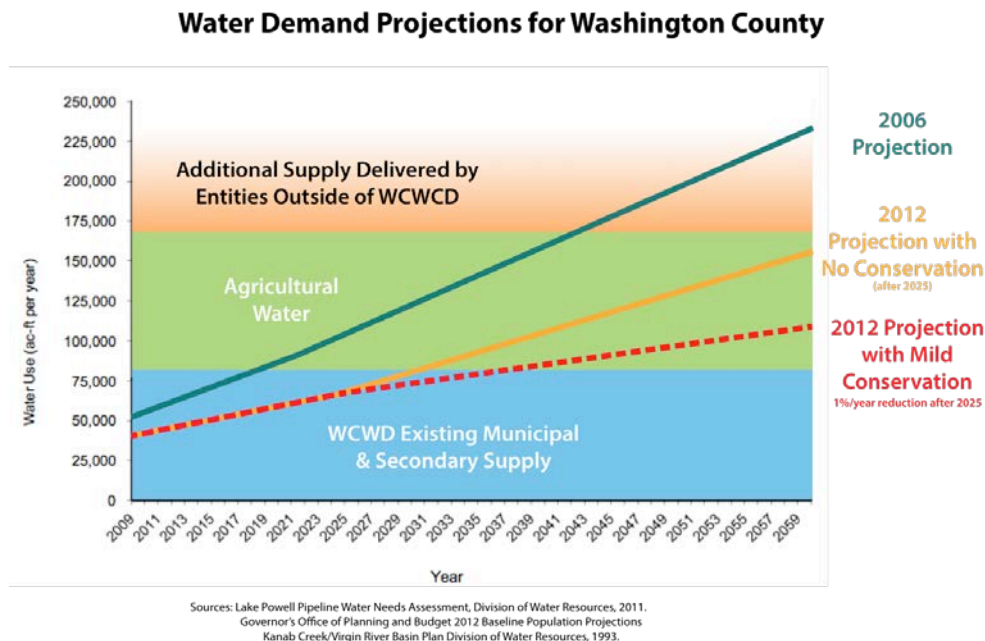


Figure 2: Population projections from the Governor's Office of Planning & Budget demonstrate reduced water demand for Washington County. The recent Legislative Audit of water needs projections questioned the conservation efforts of Utah and criticized the DWRe for not including local sources of water available outside of WCWCD supplies in planning documents. The dotted red line shows water demand if per capita water use was reduced each year after 2025 by 1 percent of the 2025 level.

<sup>1</sup> <http://governor.utah.gov/DEA/projections.html>, 2012 Baseline Projections, "Population and Households by Area." Available as <http://governor.utah.gov/DEA/ERG/ERG2012/Households%20by%20Area.xlsx>

#### UDWRe Response:

UDWRe disagrees with this assertion. WCWCD is required to, and does, utilize the most recent population estimates generated by the Governor's Office of Management and Budget (formerly the Governor's Office of Planning and Budget) population estimates in its water resource planning efforts (see, <http://gomb.utah.gov/budget-policy/demographic-economic-analysis/>, noting 581,731 residents in 2060, an increase of 252 percent when compared to current population estimates).

#### Gail Blattenberger Comment 3:

**Potential Agricultural Water Transfers.** In the most recent Kanab Creek/Virgin River Basin Plan by the Division of Water Resources (DWRe) from 1993 (1993 KCVBPP) it was estimated the basin had 25,600 acres of irrigated cropland, diverting over 123,000 acre-feet of water (pg. 10–14), with 87,800 acre-feet of the agricultural diversions in the basin occurring in Washington County. Much of the water diverted for agriculture in Washington County uses inefficient



conveyance systems and it is estimated “If the overall irrigation efficiency could be increased one percent, it would save 2,500 acre-feet of water in the basin.” (pg. 2–8 1993 KCVBWP).

County	Area* (acres)	Diversion (acre-feet)	Depletions (acre-feet)
Washington	16,680	87,800	39,320
Iron	1,520	7,860	1,490
Kane	7,400	27,640	10,490
Total	25,600	123,300	51,300
*Includes idle cropland			

As future development replaces former agricultural lands in the county, the new development creates a surplus of water formerly used to irrigate crops. Table ES-11 in the 2011 DWRe Water Needs Assessment claims that Washington County can only expect to convert 10,080 acre-feet of agricultural water for M&I needs. However Table 10-6 of the 1993 KCVBWP implies, using linear interpolation, that there will be a reduction of 27,100 acre-feet of irrigated cropland water diversions from 2011 to 2040.<sup>2</sup> According to the 2012 USDA Census of Agriculture, Washington County had 14,781 acres of irrigated lands in 2012, a reduction of over 10,000 acres since 1993.

The 2015 Legislative Audit of the Division of Water Resources found that “the state engineer typically approves the conversion of 100 percent of agricultural water to municipal use”<sup>3</sup> and thus Washington County can expect much more than 10,000 acre-feet of water to be available from agricultural conversions.

Project	Estimated Reliable Culinary Supply (ac-ft/yr)	Estimated Reliable Secondary Supply (ac-ft/yr)
Ash Creek Pipeline <sup>(1)</sup>	3,830	0
Maximize Existing Wastewater Reuse <sup>(2)</sup>	0	7,300
Agricultural Conversion from Development <sup>(3)</sup>	0	10,080
Lake Powell Pipeline	69,000	0
Potential Future Wastewater Reuse <sup>(4)</sup>	0	27,620
Total Potential Yield from Future Projects	72,830	45,000

Year	Area* (Acres)	Diversions (acre-feet)	Depletions (acre-feet)
1990	25,600	123,300	51,300
2020	21,400	96,300	43,300
2040	18,600	80,000	37,600
*includes some idle land.			

<sup>2</sup> Utah State Water Plan, Kanab Creek/Virgin River Basin, Utah Division of Water Resources, August 1993.

<sup>3</sup> “A Performance Audit of Projections of Utah’s Water Needs,” Office of the Legislative Auditor General, May 2015, Page 54. [http://le.utah.gov/audit/15\\_01rpt.pdf](http://le.utah.gov/audit/15_01rpt.pdf)

#### UDWRe Response:

**Agricultural conversion in Utah occurs on a free-market basis, and will supply some water as the land is developed for other purposes; however, water entities must work within current Utah water rights law protecting water right owners as supplies are transferred, conserved and developed to meet future demands.**

**UDWRe disagrees with this assertion as it relies on a report that is more than 20 years old and fails to consider factors potentially affecting the development of the underlying agricultural water resources.**

Since the issuance of the 1993 Basin Plan, more than 22 miles of open ditch canals have been converted to pressurized irrigation in the St. George and Washington canal companies alone, so it is likely the 2,500 acre-feet of potential water savings identified has already been realized. The 25,600 acres referenced is the amount of irrigated cropland in the entire basin: 16,680 in Washington County, 7,400 in Kane County, and 1,520 in Iron County. The Basin Plan only estimated that 3,000 acres of these acres would be converted by 2040. The estimated 14,780 acres of irrigated land in Washington County in 2012 is only a reduction of 1,900 acres from 1993, not over 10,000 acres as stated in the comment.

The linear interpolation of data in Table 10-6 from the Basin Plan (see below) did not include 2020 data, so it ignored that the report estimated more annual agricultural conversion occurring in the early years of the study period. The estimated reduction in diversions if 2020 data is used, is approximately 25,000 acre-feet, not 27,100 acre-feet. Remember, this is a basin-wide estimate and includes Washington, Kane and Iron counties, with only 65% of the basin-wide irrigated land in Washington County in 1993.

TABLE 10-6  
CURRENT AND PROJECTED IRRIGATED CROPLAND WATER USE

Year	Area <sup>a</sup> (Acres)	Diversions (acre-feet)	Depletions (acre-feet)
1990	25,600	123,300	51,300
2020	21,400	96,300	43,300
2040	18,600	80,000	37,600

<sup>a</sup>Includes some idle land.

While diversion data was linearly interpolated, the depletion data in the same table was not even mentioned. The estimated decrease in agricultural depletions from 2011 to 2040 is approximately 11,000 acre-feet basin-wide.

As can be seen in the difference between water diversion and water depletion estimates, return flows contribute to available water supplies in the Kanab Creek/Virgin River drainage basin. Downstream agricultural users of the Virgin River are especially reliant upon the return flows of upstream users. Agricultural users also routinely face shortages during drought years, so even if the State Engineer were to grant 100 percent conversion of agricultural water rights to municipal water rights, it is highly unlikely water would actually be there for use.

It is also worth mentioning that local communities value agriculture. In 2014, a state-wide, community visioning project called Envision Utah surveyed more than 50,000 Utahns on several topic areas, one of which was agriculture. The survey found that Utahns are willing to:

- cut back on watering lawns and gardens to ensure there is enough water for agricultural,
- avoid building on farmland,



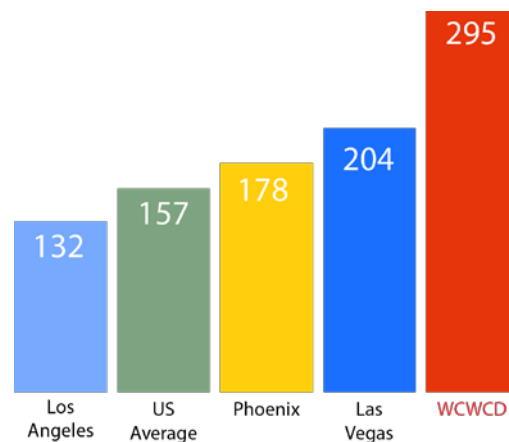
- spend more money to bring non-agricultural water to urban areas.<sup>1</sup>

The Water Needs Assessment projects 10,080 acre-feet per year of agricultural conversion by 2060 in Washington County. This estimate includes conversion of acreage on the outskirts of St. George and Washington that is most likely to be developed. Coincidentally, this acreage is located downstream on the Virgin River - the full conversion of these supplies to municipal use by the State Engineer is likely as there are no users dependent on return flows. The conversion of additional agricultural land is less likely as remaining acreage is in more rural areas that are not anticipated to see the same population increases. These remaining acreages are also upstream in the watershed, and full conversion to municipal supply is less likely to be approved.

#### Gail Blattenberger Comment 4:

**Potential Water Conservation Savings.** According to the 2011 DWRe Water Needs Assessment, WCWCD uses 295 gallons per capita per day (“GPCD”; p. ES-7) and had 13 percent water conservation savings from 2000–2009 (p. ES-10). If WCWCD encouraged residents to get closer to neighboring cities or the state conservation goal of 220 GPCD,<sup>4</sup> the district could extend its water supply even further into the future.

Figure 1: Per Person Water Use, Gallons per Day



*Since WCWCD’s per person water use is nearly twice the national average, it is clear there is great potential for additional water conservation efforts.*

The recent legislative audit noted:

*“The Southern Nevada Water Authority, which serves the Las Vegas region, has a goal to reduce water use to 199 by 2035. In contrast, the communities in Southwestern Utah, which have a climate similar to that of Southern Nevada, have a goal to reduce water use to 292 GPCD by the year 2060.”<sup>5</sup>*

<sup>4</sup> Utah baseline per capita water use: <http://state.awra.org/utah/sites/default/files/AdamsMillis-WaterNeeds.pdf>.

<sup>1</sup> Envision Utah. *Survey Results for Agriculture*. Accessed on March 30, 2016 at <http://envisionutah.org/projects/your-utah-your-future/item/346-results>.

<sup>5</sup> “A Performance Audit of Projections of Utah’s Water Needs,” Office of the Legislative Auditor General, May 2015, Page 41. [http://le.utah.gov/audit/15\\_01rpt.pdf](http://le.utah.gov/audit/15_01rpt.pdf)

**UDWRe Response:**

UDWRe’s view is that this is an inaccurate assessment of the facts. First, the analysis underrepresents actual water savings achieved to date by relying on a dated source. Second, the analysis fails to acknowledge that consumption and conservation comparisons are consistently challenged by differences in how total water consumption is calculated. Drawing a comparison to southern Nevada, for example, without mentioning the concept of return flow credits (see, [https://www.snwa.com/ws/recycled\\_returnflow.html](https://www.snwa.com/ws/recycled_returnflow.html)), is an significant omission worthy of close scrutiny.

Similarly, the comment fails to note similar that activists have also made the inconsistent charged that the Southern Nevada Water Authority’s (SNWA’s) conservation measures are “weak and inadequate” (see, SNWA defends community’s conservation efforts, [https://www.snwa.com/about/news\\_conservation.html](https://www.snwa.com/about/news_conservation.html)) or that the SNWA itself has acknowledged that differences in how water demand is calculated can result in misleading conclusions.

UDWRe and WCWCD recognize conservation is essential in meeting future water needs. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Conservation above the levels used in these reports is encouraged by WCWCD; however, the conservation goals used are prudent for planning. These goals have been vetted by Division of Water Resources, each district, community participants, and Maddaus Water Management. They exceed current state goals, utilize available technologies, and, importantly, are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County.

**Gail Blattenberger Comment 5:**

*Previously Unconsidered Water Sources.* According to a May 2015 bond rating update for WCWCD from Fitch Ratings:

*“The district has ample water supply, is expanding its water reserves through a groundwater recharge program, enjoys surplus system capacity, operates predominantly new infrastructure, and faces no known regulatory issues.”*

*The District noted it operates a groundwater recharge program that currently provides 100,000 acre-feet of water and will provide access to up to 300,000 af in the future.<sup>6</sup> This amount of water more than twice the District’s supply, yet is not accounted for in the LPP planning documents.*

*The 2015 Legislative Audit of the state sponsor of the Lake Powell Pipeline, the Utah Division of Water Resources, showed that water planners are ignoring the fact that local water providers have the ability to expand their own sources of water supply. The auditors noted St. George has the ability to expand its water supply without the assistance of WCWCD through new well drilling and other sources.<sup>7</sup> These future water sources were also not included in the LPP planning documents.*

<sup>6</sup> “Fitch Affirms Washington County Water Conservancy Dist, UT's LTGOs at 'AA+'; Outlook Stable” Business Wire, May 22, 2015.

<http://www.businesswire.com/news/home/20150522005845/en/#.VW88PufqITk>

<sup>7</sup> “A Performance Audit of Projections of Utah’s Water Needs,” Office of the Legislative Auditor General, May 2015, Page 62. [http://le.utah.gov/audit/15\\_01rpt.pdf](http://le.utah.gov/audit/15_01rpt.pdf)

**UDWRe Response:**

The analysis misconstrues the facts. While Washington County does have 100,000 acre feet of water available in the Sand Hollow aquifer, as mentioned in the Water Needs Assessment, the amount of annual recharge to this reserve aquifer is approximately 8,000 acre feet per year. Future wells are planned to utilize the majority of this annual yield with the remaining portion being reserved for use during dry periods to compensate for any deficit between annual supply and demand. Depleting more than this amount annually will inevitably erode the reserve, an imprudent and irresponsible water resource management practice. The commenter’s analysis omits the cited reference from Fitch Rating affirming a crediting rating of ‘AA’ for Washington County Water Conservancy District bonds (see, Fitch Affirms Washington County Water Conservancy Dist, UT's LTGOs at 'AA+'; Outlook Stable, <http://www.businesswire.com/news/home/20150522005845/en/Fitch-Affirms-Washington-County-Water-Conservancy-Dist>). Depleting the reserve would not only be an imprudent water resource management practice, it would also be an irresponsible financial practice as a decrease or elimination of this contingency reserve would be viewed negatively by creditors, increasing the district’s borrowing costs.

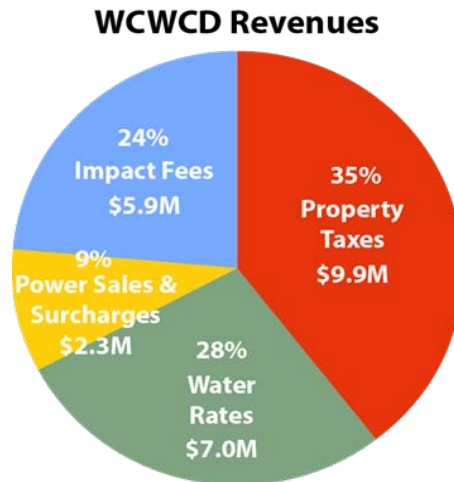
**Gail Blattenberger Comment 6:**

***Estimate of Existing Revenues vs. Debt Service for WCWCD.***

*One important question is whether or not local taxpayers can support Washington County’s repayment obligation for the LPP as is required by Utah Law. The Lake Powell Pipeline (LPP) Development Act (Utah Code 73-28-402) mandates the entire project cost be repaid to the State of Utah with interest.*

*Repayment of the LPP construction costs requires the District’s total revenues to cover their existing operation and maintenance costs, preexisting debt obligations, debt from LPP construction, and the operation and maintenance costs associated with the LPP.*

*A review of the WCWCD’s revenue streams is warranted, based on the 2013 Audited Financial Statement Prepared for WCWCD, the “2013 WCWCDAFS”.<sup>8</sup>*



*Figure 3: Revenue Sources from 2012 Audited financial statement from WCWCD*

<sup>8</sup> “Washington County Water Conservancy District Financial Statement With Other Government Reports For the year ending June 30, 2013.”

**UDWRe Response:**

**The Lake Powell Pipeline Development Act provides a defined and workable structure to fund the Lake Powell Pipeline Project.**

**Gail Blattenberger Comment 7:**

***Current Revenues***

***Operating Revenues.*** WCWCD received \$7,013,377 in water sales revenue, \$926,134 in power sales revenues and \$1,379,171 in Water Development and Connection Fees (page 22 of the 2013 WCWCDAFS). These last two categories are represented as “Power Sales & Surcharges” in the above pie chart.

	<u>2013</u>
<b>OPERATING REVENUES:</b>	
Power Sales	\$ 926,134
Water Sales (net of rebates)	7,013,377
Water Development and Connection Fees	1,379,171
<b>Total Revenues</b>	<u>9,318,682</u>

***Property Tax Revenues.*** In 2013 WCWCD collected \$9,938,660 from property taxes (see the source in the next paragraph). Its levy rate was 0.000970544 times the taxable value of the county (p. 19 of the 2013 WCWCDAFS).

***Impact Fee Revenues.*** WCWCD collected \$5,919,316 in impact fees for new development in 2013 (page 19 of the 2013 WCWCDAFS):

	General Fund	Virgin River Program	Capital Projects Fund	Total Governmental Funds
<b>REVENUE:</b>				
Property Taxes	\$ 9,938,660	\$ -	\$ -	\$ 9,938,660
Impact Fees - Current Year	-	-	5,919,316	5,919,316

***Revenues from Sale of WCWCD's Surplus Real Property.*** According to page 7 of the 2013 WCWCDAFS, the District has between 1000–1200 acres in real property that can be sold at market value for additional funds. The District claims this property is valued between \$50,000–\$125,000 per acre. For this analysis it was assumed the District would sell 1200 acres at the highest market value to help pay for the LPP, giving the district a one-time revenue source of \$150,000,000.

The District owns real property which is shown on the books at cost. Approximately 1000 - 1200 acres may eventually be declared surplus property and sold at market value. The current fair market value for this property is \$50,000 to \$125,000 per acre. It is anticipated that the value will continue to increase over time. These values are not reflected in the statement of net position.

**UDWRe Response:**

**This is an accurate assessment of Washington County Water Conservancy District's operating revenues as reported in the district's financial statements for 2013.**

**Gail Blattenberger Comment 8:**

***Existing Debt Service by WCWCD (not including LPP).*** The WCWCD has \$7,026,322 in annual debt service for previous obligations for FYE 2013, not including debt from the Lake Powell Pipeline, as shown on the 2014 row of the District's debt service schedule (p. 39 of the 2013 WCWCDAFS). This non-LPP debt service increases annually through 2037 before being extinguished in 2050, totaling \$94.3 million. The District's debt schedule is included below.

Total remaining principle and interest debt service by year is as follows:

Year Ending December 31	Principal	Interest	Annual Debt Service
2014	\$ 4,235,743	\$ 2,790,579	\$ 7,026,322
2015	4,422,856	2,616,602	7,039,458
2016	4,580,005	2,468,102	7,048,107
2017	4,780,193	2,268,125	7,048,318
2018	4,992,420	2,058,228	7,050,648
2019	4,599,688	1,851,402	6,451,090
2020	4,784,997	1,671,335	6,456,332
2021	4,657,349	1,481,231	6,138,580
2022	3,810,746	1,284,484	5,095,230
2023	3,999,189	1,102,551	5,101,740
2024	4,197,680	911,505	5,109,185
2025	4,380,220	719,745	5,099,965
2026	2,658,811	519,539	3,178,350
2027	2,782,454	396,541	3,178,995
2028	2,921,151	267,724	3,188,875
2029	1,653,905	132,385	1,786,290
2030	1,556,716	53,744	1,610,460
2031	1,558,587	51,873	1,610,460
2032	1,560,520	49,940	1,610,460
2033	1,562,516	47,944	1,610,460
2034	64,578	45,882	110,460
2035	66,709	43,751	110,460
2036	68,909	41,551	110,460
2037	71,183	39,277	110,460
2038	73,532	36,929	110,461
2039	75,956	34,504	110,460
2040	78,462	31,998	110,460
2041	81,051	29,409	110,460
2042	83,724	26,736	110,460
2043	86,486	23,974	110,460
2044	89,339	21,121	110,460
2045	92,286	18,174	110,460
2046	95,331	15,129	110,460
2047	98,476	11,984	110,460
2048	101,724	8,736	110,460
2049	105,080	5,380	110,460
2050	108,340	2,118	110,458
Totals	<u>\$71,136,912</u>	<u>\$23,180,232</u>	<u>\$94,317,144</u>

WCWCD existing debt schedule, not including LPP debt.

#### UDWRe Response:

It is correct that the Washington County Water Conservancy District had scheduled annual debt service payments of roughly \$7 million in 2014. However, the commenter goes on to say, “This non-LPP debt service increases annually through 2037 before being extinguished in 2050, totaling \$94.3 million. The District’s debt schedule is included below.” [Emphasis added; references table provided to the right]. Note that table referenced by the commenter, and included in the submission, show anticipated debt service of \$100,460 in 2037, decreasing materially as compared to the current rate of debt service (not increasing as indicated).

#### Gail Blattenberger Comment 9:

*Existing Operation and Maintenance Expenses. In addition to its debt obligations, WCWCD has operating and maintenance expenses, totaling \$13,231,636 according to the 2013 WCWCDAFS.*



*These expenses are assumed to grow proportionally to the number of new households in the county, shown in the attached spreadsheet's Column J<sup>9</sup>. Operating and maintenance costs have been included as part of LPP participation in Column L. Our estimates of WCWCD Total Expenses are shown in Column N<sup>10</sup>.*

[Below is an active link to the above referenced spreadsheet located at the FERC website for the LPP Project (Docket P-12966) (UBWR)]

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14159209>

<sup>9</sup> *The First and Second Scenarios in the spreadsheet represent the low and high cost estimates of the LPP project assumed in our analysis. Existing revenues and expenses of the District were assumed to stay the same in both scenarios (Columns B-F). Differences in the two project cost scenarios resulted in changes to the debt associated with the project (Columns G-P) and the repayment options (Columns Q-V).*

<sup>10</sup> *Note: Columns K and L differ between the two project cost scenarios.*

#### **UDWRe Response:**

**These calculations have been reviewed. And, while the statement is an accurate representation of what has been done in the commenter's submission, the underlying analysis is critically flawed for a number of reasons. Most notably, the provided financial analysis operates under the assumption the Lake Powell Pipeline would be paid back (1) over a 50-year period, (2) at an annual interest rate of 4 percent; (3) beginning in 2015. Each of these elements summarily ignores the provisions of the Lake Powell Pipeline Development Act, which specifically calls for the repayment of project costs once developed water is delivered to the district(s).**

#### **Lake Powell Pipeline Development Act**

**73-28-402. Agreement for delivery – Period for repayment of costs.**

**(1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**

**(2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**

**(a) the delivery of developed water to the district during the first ten years after the project is completed; or**

**(b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**

**(3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**

**(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**The commenter's assertion that today's Washington County residents would be required to bear the full cost of a pipeline project that will not come on-line (begin delivering water) for 12 years is a development scenario that is inaccurate. As currently designed, the commenter would have Washington County residents paying interest on a \$1.33 billion note (first scenario) before those funds could even have been obtained and spent. Such an assertion not only stands in sharp contrast to the plain language of the Lake Powell Pipeline Development Act (above), but it has the deceptive result of artificially**

inflating per capita costs that are later used to support the conclusion that unsupportable cost increases would need to be borne by local water users. Importantly, this same intellectual fallacy is applied to elasticity calculations, rate increases, impact fee requirements and other factors, which serve to compound other errors contained in the analysis.

In what is referred to as the “second scenario,” the commenter assumes a 10-year period that allows for “initial payment-free years (can be zero); water rates & impact fees don't change during this time.” The Lake Powell Pipeline is then amortized in a straight-line fashion over a 40-year period. Under the second scenario, the commenter’s submission assumes the project has a cost of \$1.75 billion. Again, no adjustments are made for when water is actually delivered and there is no explanation as to why water rates or impact fees would not be adjusted during the 10-year “initial payment-free period.” This approach merely serves to artificially inflate the subsequent comparisons.

Further exacerbating this issue is that the formulas applied in the analysis also appear to be incorrect. Note that “Total Debt Service” in 2015 for both the first scenario and the second scenario (Column M) are calculated by adding “Annual Debt Service on Existing Debt” (Column I) and “Annual Lake Powell Pipeline Debt” (Column K), both for 2015. However, when looking at the “Total Debt Service” calculation for 2016, it is the sum of Annual Debt Service on Existing Debt” (Column I) for 2015 and the “Annual Lake Powell Pipeline Debt” for 2016. This error is applied in every subsequent year. An illustration of this error for 2018 is provided below. Obviously, it will also affect the total expense calculation; however, the full ramifications cannot be determined as a result of the intersection with other errors noted in this response.

### Referenced Expense Miscalculation Columns H through N (First Scenario)

	A	H	I	J	K	L	M	N
	Year	TOTAL REVENUES	Annual Debt Service on Existing Debt	Existing O&M Costs	Annual LPP Debt Service	LPP O&M Costs	Total Annual Debt Service	TOTAL EXPENSES
23	2015	\$44,293,958	\$7,026,322	\$13,231,636	\$0	\$0	\$7,026,322	\$20,257,958
24	2016	\$45,263,415	\$7,039,458	\$13,669,525	\$0	\$0	\$7,026,322	\$20,695,847
25	2017	\$46,264,956	\$7,048,107	\$14,121,906	\$0	\$0	\$7,039,458	\$21,161,364
26	2018	\$47,266,497	\$7,056,756	\$14,589,258	\$-103	\$0	=K27+I26	\$21,637,869
Lake Powell Pipeline Project								
Responses to Participant Comments on LLP and Draft Study Reports								
29	2020	\$49,472,874	\$6,451,090	\$15,570,874	\$0	\$0	\$7,050,648	\$22,621,522
30	2021	\$50,613,723	\$6,456,332	\$16,086,178	\$0	\$0	\$6,451,090	\$22,537,268
31	2022	\$51,792,328	\$6,138,580	\$16,618,536	\$0	\$0	\$6,456,332	\$23,074,868

04/30/16

**Referenced Expense Calculation**  
Columns I through N (First Scenario)

A	I	J	K	L	M	N
Year	Annual Debt Service on Existing Debt	Existing O&M Costs	Annual LPP Debt Service	LPP O&M Costs	Total Annual Debt Service	TOTAL EXPENSES
2015	\$7,026,322	\$13,231,636	\$61,840,170	\$0	\$68,866,492	\$82,098,128
2016	\$7,039,458	\$13,669,525	\$61,840,170	\$0	\$68,866,492	\$82,536,017
2017	\$7,048,107	\$14,121,906	\$61,840,170	\$0	\$68,879,628	\$83,001,534
2018	\$7,048,318	\$14,589,258	\$61,840,170	\$0	\$68,888,277	\$83,477,535
2019	\$7,050,648	\$15,072,077	\$61,840,170	\$0	\$68,888,488	\$83,960,565
2020	\$6,451,090	\$15,570,874	\$61,840,170	\$0	\$68,890,818	\$84,461,692
2021	\$6,456,332	\$16,086,178	\$61,840,170	\$0	\$68,291,260	\$84,377,438
2022	\$6,138,580	\$16,618,536	\$61,840,170	\$0	\$68,296,502	\$84,915,038
2023	\$5,095,230	\$17,168,512	\$61,840,170	\$0	\$67,978,750	\$85,147,262
2024	\$5,101,740	\$17,736,688	\$61,840,170	\$0	\$66,935,400	\$84,672,088
2025	\$5,109,185	\$18,323,668	\$61,840,170	\$0	\$66,941,910	\$85,265,578
2026	\$5,099,965	\$18,930,074	\$61,840,170	\$23,493,231	\$66,949,355	\$109,372,659
2027	\$3,178,350	\$19,556,548	\$61,840,170	\$24,432,960	\$66,940,135	\$110,929,643
2028	\$3,178,995	\$20,203,755	\$61,840,170	\$25,410,278	\$65,018,520	\$110,632,553
2029	\$3,188,875	\$20,872,380	\$61,840,170	\$26,426,689	\$65,019,165	\$112,318,234
2030	\$1,786,290	\$21,563,133	\$61,840,170	\$27,483,757	\$65,029,045	\$114,075,935
2031	\$1,610,460	\$22,276,746	\$61,840,170	\$28,583,107	\$63,626,460	\$114,486,313
2032	\$1,610,460	\$23,013,975	\$61,840,170	\$29,726,432	\$63,450,630	\$116,191,037
2033	\$1,610,460	\$23,775,602	\$61,840,170	\$30,915,489	\$63,450,630	\$118,141,721
2034	\$1,610,460	\$24,562,435	\$61,840,170	\$32,152,108	\$63,450,630	\$120,165,173
2035	\$110,460	\$25,375,307	\$61,840,170	\$33,438,193	\$63,450,630	\$122,264,130
2036	\$110,460	\$26,215,080	\$61,840,170	\$34,775,720	\$61,950,630	\$122,941,431
2037	\$110,460	\$27,082,645	\$61,840,170	\$36,166,749	\$61,950,630	\$125,200,024
2038	\$110,460	\$27,978,922	\$61,840,170	\$37,613,419	\$61,950,630	\$127,542,971
2039	\$110,460	\$28,904,859	\$61,840,170	\$39,117,956	\$61,950,630	\$129,973,445
2040	\$110,460	\$29,861,440	\$61,840,170	\$40,682,674	\$61,950,630	\$132,494,744
2041	\$110,460	\$30,849,678	\$61,840,170	\$42,309,981	\$61,950,630	\$135,110,289
2042	\$110,460	\$31,870,621	\$61,840,170	\$44,002,380	\$61,950,630	\$137,823,631
2043	\$110,460	\$32,925,351	\$61,840,170	\$45,762,476	\$61,950,630	\$140,638,456
2044	\$110,460	\$34,014,986	\$61,840,170	\$47,592,975	\$61,950,630	\$143,558,591
2045	\$110,460	\$35,140,682	\$61,840,170	\$49,496,694	\$61,950,630	\$146,588,006
2046	\$110,460	\$36,303,632	\$61,840,170	\$51,476,561	\$61,950,630	\$149,730,823
2047	\$110,460	\$37,505,069	\$61,840,170	\$53,535,624	\$61,950,630	\$152,991,322
2048	\$110,460	\$38,746,266	\$61,840,170	\$55,677,049	\$61,950,630	\$156,373,944
2049	\$110,460	\$40,028,539	\$61,840,170	\$57,904,131	\$61,950,630	\$159,883,300
2050	\$110,460	\$41,353,248	\$61,840,170	\$60,220,296	\$61,950,630	\$163,524,174
2051	\$110,460	\$42,721,797	\$61,840,170	\$62,629,108	\$61,950,630	\$167,301,535
2052	\$0	\$44,135,638	\$61,840,170	\$65,134,272	\$61,950,630	\$171,220,539

**Gail Blattenberger Comment 10:**

*Estimate of Additional Debt Service from the Lake Powell Pipeline on WCWCD*

**50-Year Repayment Obligation for Lake Powell Pipeline by Washington County Taxpayers.** The following is the calculation of total annual debt service the WCWCD would incur to participate in the LPP. The WCWCD has announced they intend to receive 94.5 percent of the project water<sup>12</sup>, meaning they will be required to repay 94.5 percent of the roughly \$1.4–\$1.8 billion cost.<sup>13</sup> The WCWCD can therefore expect to repay \$1.33 billion – \$1.75 billion in capital costs to repay. Assuming a 50-year repayment period, the annual debt service varies with the interest rate as follows:

**Annual Debt Service Payments for LPP  
by the Washington County Water Conservancy District**

Repayment Cost	Interest Rate			
	0.03	0.04	0.05	0.07
\$1.33 Billion	\$51,631,330	\$61,840,170	\$72,758,808	\$96,260,153
\$1.75 Billion	\$101,799,606	\$130,945,384	\$166,211,969	\$258,354,138

In other words, the repayment obligation from the LPP will add between \$51.6 and \$258 million in additional annual debt burden onto WCWCD’s existing debt service, depending on final project cost and interest rate. A reasonable assumption for a 50-year interest rate is 4 percent, meaning an additional \$61.8–131 million in new annual debt payments due to the LPP, shown in the attached spreadsheet’s Column K.

[Below is an active link to the above referenced spreadsheet located at the FERC website for the LPP Project (Docket P-12966) (UBWR)]

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14159209>

<sup>11</sup> 69,000 af / 73,000 af, Page ES-5, 2011 LPP Water Needs Assessment. (For the CICWCD see “Iron County pulls out of Lake Powell pipeline project,” Salt Lake Tribune, March 22, 2012.)

<sup>12</sup> Lake Powell Pipeline Modified Draft Study Report 10, Socioeconomic and Water Resource Economics, February 2012

**UDWRe Response:**

Please see the discussion and supporting reference table under Issue #9. The commenter’s analysis’ provision of a range of alternative interest rates is instructive, but does not overcome or mitigate the logical flaws underlying the analysis.

Additionally, it is important to note that the resulting payment calculations also appear to be misrepresented in the table provided, as they are all ostensibly designed to reflect a 50-year repayment period. Note, for example, at 4 percent interest, \$1.33 billion would have an annual payment of \$61,840,170. This matches the provided table. Applying the same formula to \$1.75 billion, however, produces an annual payment of \$81,505,144. Thus, even under the inaccurate assumptions applied in the commenter’s submission, the analysts appear to have overestimated the 50-year repayment by roughly \$50 million per year. A closer look at the underlying calculations suggest that commenter’s second



scenario assumes a 10-year payment-free period while the Lake Powell Pipeline is being constructed and then assumes the project is paid off in 40-years, not 50-years, as the provided summary table might otherwise suggest.

**Gail Blattenberger Comment 11:**

*Estimate of Additional Debt Service from the Lake Powell Pipeline on WCWCD LPP Power Generation Revenues and Operation and Maintenance Costs. The different cost estimates put forward in the 2012 Lake Powell Pipeline Modified Draft Study Report 10 are due to different levels of pump-storage power generation capacities presented in the planning documents. The \$1.8 billion cost estimate generates more power sales revenues than the \$1.4 billion project cost projection, but also requires much more operation and maintenance costs. The expected revenues and expenses can be seen here:*

Construction Cost	2026 Power Sales Revenue	2026 Operation and Maintenance Expenses
\$1.4 Billion	\$9,947,747	\$23,493,231
\$1.8 Billion	\$72,005,740	\$62,867,794

*Based on the expected growth of existing revenue streams due to population increase in the county, WCWCD's revenues can be projected over the next 50 years, as shown in Column H. The deficit schedule for the repayment period can be seen in Columns O and P. These columns show that the District's revenues fall significantly short of the District's expenses for every year of the 50-year repayment schedule (except for any initial payment-free years). Unless the District has an increase in revenues, WCWCD's cumulative debt would grow to between \$5.84–6.76 billion (cell P73) by the end of the project repayment period. Clearly, participation by the WCWCD in the LPP will require significant increases in impact fees and/or water rates.*

[Below is an active link to the above referenced spreadsheet located at the FERC website for the LPP Project (Docket P-12966) (UBWR)]

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14159209>

**UDWRe Response:**

**This analysis builds on what UDWRe considers to be the flaws noted in the underlying calculations noted previously. They do so in a number of ways, some of which are outlined below.**

- **Column A. Property Taxes.** The analysis assumes that property tax revenue will increase only by the rate of population growth. This materially under estimates property tax increases as taxable property value will increase as a result of both incremental residential and commercial property constructed as well as inflation. The Federal Housing Finance Agency, for example, reports that residential properties in the St. George MSA increased 7.8 percent during the past 12 months and 24.4 percent during the past five years (see, [http://www.fhfa.gov/AboutUs/Reports/ReportDocuments/HPI4Q2015\\_2252016.pdf](http://www.fhfa.gov/AboutUs/Reports/ReportDocuments/HPI4Q2015_2252016.pdf)). These price escalations are a material omission relative to property tax collections, well



exceeding inflation, further undermining the analysis.

- **Column B. Water Rates.** Even more significant is miscalculation of water rate revenue. Ms. Blattenberger's analysis simply applies the expected rate of population growth (3.3 percent) to an estimated water revenue total of \$7.245 million in 2015. The problem with this approach is that it fails to consider that the Washington County Water Conservancy District is not the only provider of water in the region. At present, local municipalities deliver roughly 56 percent of the potable water consumed by residents and businesses in Washington County; the Washington County Water Conservancy District accounts for the remaining 44 percent. By 2060, when Washington County is assumed to be utilizing its full allocation of Lake Powell Pipeline water, this ratio shifts from 56%/44% to 18%/82%. It is difficult to gauge the impact of this miscalculation as it is muddled by other miscalculations. That said, the fact that the analysis fails to realize that each new connection will generate more revenue for the Washington County Water Conservancy District as it grows to account for a greater share of water consumption is significantly underestimating water rate revenue for the region.
- **Column C. Power Sale Revenue and Surcharges.** It is unclear how power surcharges are generated before the Lake Powell Pipeline is even constructed.

**Column D. Real Estate Investment Revenue.** It is unclear why real estate prices are assumed to remain unchanged for a decade.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Year	Property Taxes	water sales revenue	Power sale revenue and Surcharges	Impact Fees	Real Estate sale revenue	LPP Power sale revenue	TOTAL REVENUES	Annual Debt Service on Existing Debt	Existing O&M Costs	Annual LPP Debt Service	LPP O&M Costs	Total Annual Debt Service	TOTAL EXPENSES
2015	\$10,267,571	\$7,245,479	\$2,381,597	\$9,399,311	\$15,000,000	\$0	\$44,293,958	\$7,026,322	\$13,231,636	\$61,840,170	\$0	\$68,866,492	\$82,098,128
2016	\$10,607,367	\$7,485,261	\$2,460,414	\$9,710,373	\$15,000,000	\$0	\$45,263,415	\$7,039,458	\$13,669,525	\$61,840,170	\$0	\$68,866,492	\$82,536,017
2017	\$10,958,409	\$7,732,979	\$2,541,839	\$10,031,729	\$15,000,000	\$0	\$46,264,956	\$7,048,107	\$14,121,906	\$61,840,170	\$0	\$68,879,628	\$83,001,534
2018	\$11,321,068	\$7,988,895	\$2,625,959	\$10,363,720	\$15,000,000	\$0	\$47,299,643	\$7,048,318	\$14,589,258	\$61,840,170	\$0	\$68,888,277	\$83,477,535
2019	\$11,695,728	\$8,253,281	\$2,712,863	\$10,706,699	\$15,000,000	\$0	\$48,368,571	\$7,050,648	\$15,072,077	\$61,840,170	\$0	\$68,888,488	\$83,960,565
2020	\$12,082,788	\$8,526,416	\$2,802,643	\$11,061,027	\$15,000,000	\$0	\$49,472,874	\$6,451,090	\$15,570,874	\$61,840,170	\$0	\$68,890,818	\$84,461,692
2021	\$12,482,657	\$8,808,590	\$2,895,394	\$11,427,082	\$15,000,000	\$0	\$50,613,723	\$6,456,332	\$16,086,178	\$61,840,170	\$0	\$68,291,260	\$84,377,438
2022	\$12,895,760	\$9,100,103	\$2,991,214	\$11,805,251	\$15,000,000	\$0	\$51,792,328	\$6,138,580	\$16,618,536	\$61,840,170	\$0	\$68,296,502	\$84,915,038
2023	\$13,322,534	\$9,401,262	\$3,090,206	\$12,195,936	\$15,000,000	\$0	\$53,009,938	\$5,095,230	\$17,168,512	\$61,840,170	\$0	\$67,978,750	\$85,147,262
2024	\$13,763,431	\$9,712,389	\$3,192,473	\$12,599,550	\$15,000,000	\$0	\$54,267,843	\$5,101,740	\$17,736,688	\$61,840,170	\$0	\$66,935,400	\$84,672,088
2025	\$14,218,920	\$10,033,812	\$3,298,125	\$13,016,520	\$0	\$0	\$40,567,377	\$5,109,185	\$18,323,668	\$61,840,170	\$0	\$66,941,910	\$85,265,578
2026	\$14,689,482	\$10,365,872	\$3,407,274	\$13,447,291	\$0	\$9,947,747	\$51,857,666	\$5,099,965	\$18,930,074	\$61,840,170	\$23,493,231	\$66,949,355	\$109,372,659
2027	\$15,175,618	\$10,708,921	\$3,520,035	\$13,892,317	\$0	\$10,345,657	\$53,642,548	\$3,178,350	\$19,556,548	\$61,840,170	\$24,432,960	\$66,940,135	\$110,929,643
2028	\$15,677,841	\$11,063,324	\$3,636,527	\$14,352,071	\$0	\$10,759,483	\$55,489,246	\$3,178,995	\$20,203,755	\$61,840,170	\$25,410,278	\$65,018,520	\$110,632,553
2029	\$16,196,686	\$11,429,455	\$3,756,875	\$14,827,040	\$0	\$11,189,862	\$57,399,917	\$3,188,875	\$20,872,380	\$61,840,170	\$26,426,689	\$65,019,165	\$112,318,234
2030	\$16,732,701	\$11,807,702	\$3,881,205	\$15,317,728	\$0	\$11,637,457	\$59,376,793	\$1,786,290	\$21,563,133	\$61,840,170	\$27,483,757	\$65,029,045	\$114,075,935
2031	\$17,286,455	\$12,198,468	\$4,009,650	\$15,824,654	\$0	\$12,102,955	\$61,422,182	\$1,610,460	\$22,276,746	\$61,840,170	\$28,583,107	\$63,626,460	\$114,486,313
2032	\$17,858,535	\$12,602,165	\$4,142,346	\$16,348,357	\$0	\$12,587,073	\$63,538,477	\$1,610,460	\$23,013,975	\$61,840,170	\$29,726,432	\$63,450,630	\$116,191,037
2033	\$18,449,547	\$13,019,223	\$4,279,433	\$16,889,392	\$0	\$13,090,556	\$65,728,151	\$1,610,460	\$23,775,602	\$61,840,170	\$30,915,489	\$63,450,630	\$118,141,721
2034	\$19,060,118	\$13,450,082	\$4,421,057	\$17,448,331	\$0	\$13,614,179	\$67,993,768	\$1,610,460	\$24,562,435	\$61,840,170	\$32,152,108	\$63,450,630	\$120,165,173
2035	\$19,690,896	\$13,895,201	\$4,567,368	\$18,025,768	\$0	\$14,158,746	\$70,337,980	\$1,100,460	\$25,375,307	\$61,840,170	\$33,438,193	\$63,450,630	\$122,264,130
2036	\$20,342,549	\$14,355,050	\$4,718,521	\$18,622,315	\$0	\$14,725,096	\$72,763,532	\$1,100,460	\$26,215,080	\$61,840,170	\$34,775,720	\$61,950,630	\$122,941,431
2037	\$21,015,768	\$14,830,118	\$4,874,677	\$19,238,604	\$0	\$15,314,099	\$75,273,266	\$1,100,460	\$27,082,645	\$61,840,170	\$36,166,749	\$61,950,630	\$125,200,024
2038	\$21,711,266	\$15,320,908	\$5,036,000	\$19,875,289	\$0	\$15,926,663	\$77,870,126	\$1,100,460	\$27,978,922	\$61,840,170	\$37,613,419	\$61,950,630	\$127,542,971
2039	\$22,429,781	\$15,827,940	\$5,202,662	\$20,533,044	\$0	\$16,563,730	\$80,557,157	\$1,100,460	\$28,904,859	\$61,840,170	\$39,117,956	\$61,950,630	\$129,973,445
2040	\$23,172,075	\$16,351,751	\$5,374,839	\$21,212,567	\$0	\$17,226,279	\$83,337,512	\$1,100,460	\$29,861,440	\$61,840,170	\$40,682,674	\$61,950,630	\$132,494,744
2041	\$23,938,934	\$16,892,898	\$5,552,715	\$21,914,578	\$0	\$17,915,330	\$86,214,456	\$1,100,460	\$30,849,678	\$61,840,170	\$42,309,981	\$61,950,630	\$135,110,289
2042	\$24,731,172	\$17,451,954	\$5,736,477	\$22,639,822	\$0	\$18,631,943	\$89,191,368	\$1,100,460	\$31,870,621	\$61,840,170	\$44,002,380	\$61,950,630	\$137,823,631
2043	\$25,549,628	\$18,029,511	\$5,926,321	\$23,389,067	\$0	\$19,377,221	\$92,271,748	\$1,100,460	\$32,925,351	\$61,840,170	\$45,762,476	\$61,950,630	\$140,638,456
2044	\$26,395,171	\$18,626,181	\$6,122,447	\$24,163,107	\$0	\$20,152,310	\$95,459,217	\$1,100,460	\$34,014,986	\$61,840,170	\$47,592,975	\$61,950,630	\$143,558,591
2045	\$27,268,696	\$19,242,598	\$6,325,064	\$24,962,764	\$0	\$20,958,402	\$98,757,524	\$1,100,460	\$35,140,682	\$61,840,170	\$49,496,694	\$61,950,630	\$146,588,006
2046	\$28,171,129	\$19,879,415	\$6,534,386	\$25,788,884	\$0	\$21,796,739	\$102,170,554	\$1,100,460	\$36,303,632	\$61,840,170	\$51,476,561	\$61,950,630	\$149,730,823
2047	\$29,103,428	\$20,537,307	\$6,750,636	\$26,642,345	\$0	\$22,668,608	\$105,702,324	\$1,100,460	\$37,505,069	\$61,840,170	\$53,535,624	\$61,950,630	\$152,991,322
2048	\$30,066,580	\$21,216,971	\$6,974,042	\$27,524,050	\$0	\$23,575,352	\$109,356,995	\$1,100,460	\$38,746,266	\$61,840,170	\$55,677,049	\$61,950,630	\$156,373,944
2049	\$31,061,607	\$21,919,128	\$7,204,842	\$28,434,934	\$0	\$24,518,367	\$113,138,877	\$1,100,460	\$40,028,539	\$61,840,170	\$57,904,131	\$61,950,630	\$159,883,300
2050	\$32,089,563	\$22,644,522	\$7,443,280	\$29,375,963	\$0	\$25,499,101	\$117,052,429	\$1,100,460	\$41,353,248	\$61,840,170	\$60,220,296	\$61,950,630	\$163,524,174
2051	\$33,151,539	\$23,393,922	\$7,689,609	\$30,348,134	\$0	\$26,519,065	\$121,102,270	\$1,100,460	\$42,721,797	\$61,840,170	\$62,629,108	\$61,950,630	\$167,301,535
2052	\$34,248,660	\$24,168,124	\$7,944,090	\$31,352,479	\$0	\$27,579,828	\$125,293,180	\$0	\$44,135,638	\$61,840,170	\$65,134,272	\$61,950,630	\$171,220,539
2053	\$35,382,089	\$24,967,946	\$8,206,992	\$32,390,062	\$0	\$28,683,021	\$129,630,110	\$0	\$45,596,268	\$61,840,170	\$67,739,643	\$61,840,170	\$175,176,080

Gail Blattenberger Comment 12:

*Water Rate and Impact Fee Increases Required to Repay Debt*

*The fundamental question is whether the WCWCD can make these debt payments via an increase in revenue<sup>13</sup>, and if so how they will raise this revenue.*

**Increasing Property Taxes.** According to Utah law, water conservancy districts in the Lower Colorado River Basin may not tax higher than 0.001 per dollar of taxable value of taxable property in the district.<sup>14</sup> WCWCD currently collects property taxes at the rate of 0.00097. However, even if WCWCD increased their levy to the maximum collection rate, this only increases revenues \$301,642 and revenues would still fall short of their expenses by tens of millions of dollars each year, accumulating to a deficit of billions dollars at the end of the 50-year repayment period. Therefore increasing water rates and/or impact fees must also be implemented by WCWCD.

[Below is an active link to the above referenced spreadsheet located at the FERC website for the LPP Project (Docket P-12966) (UBWR)]

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14159209>

<sup>13</sup> In the low-cost scenario, we assumed repayments start immediately, which keeps costs as low as possible. In the high-cost scenario, we assumed repayments begin after a delay of 10 years, which is more realistic and raises costs.

<sup>14</sup> Utah Code, Section 17B-2a-1006. <http://le.utah.gov/code/TITLE17B/htm/17B02a100600.htm>

#### **UDWRe Response:**

**The question is inaccurate as “these debt payments” are calculated incorrectly and inconsistently with Lake Powell Pipeline Development Act and revenues are also calculated incorrectly. The combination of these factors renders this analysis effectively inaccurate.**

**The property tax rate applied in the commenter’s submission is inaccurate. The Washington County Water Conservancy District currently levies a rate of .000775 not .00097. This further underscores the errors in the analysis provided by the commenter, an error which is compounded by a material understatement of property value upon which the incremental rate would be applied (Refer to Gail Blattenberger Comment 11).**

#### **Gail Blattenberger Comment 13:**

##### ***Water Rate and Impact Fee Increases Required to Repay Debt***

**Increasing Water Rates.** Columns Q and R examine whether increasing water rates alone, without any impact fee increases, could repay Washington County Water District’s total future debt. Although one might think the WCWCD could simply increase water rates to raise revenues, raising water rates will result in a decrease in total water demand. Because the debt is relatively large, in order for water sales to cover the debt obligations of the project, water sales revenues would need to increase by 320–358 percent, depending upon the total cost of the LPP (spreadsheet cell B10). This would still require the WCWCD to shoulder significant deficits over time, but would result in a balance of essentially zero in 2063 (Columns Q and R; cell R73).

Due to the fact that the price elasticity of demand for water is estimated to be -0.5, repayment through water sales alone would require rate increases of 1665–1995 percent (cell B12). This enormous increase in water rates would lead Washington County water users to need less water

*in 2060 than they used in 2010 (cells O12 and AA12 of the “Water Demand” worksheet), meaning that there would be no need for the water supplied by the LPP. In other words, if the LPP is financed only by increasing water rates, water would become so expensive that future water demand would drop below the current water demand of WCWCD,<sup>15</sup> even if one ignores other water sources identified above.*

*Increases in water rates may slow the rate of population growth in Washington County, which would make the LPP both harder to pay back and less necessary. To avoid this and maintain the desirability of homes and building lots in Washington County in the face of increases in water rates, the price of that real estate would have to fall. The lower property values would decrease the property taxes collected by the District, forcing water rates to go up more than anticipated and forcing real estate values to go down more than anticipated.*

[Below is an active link to the above referenced spreadsheet located at the FERC website for the LPP Project (Docket P-12966) (UBWR)]

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14159209>

<sup>15</sup> This is because cell B11 is larger than cell B8 in both scenarios.

#### **UDWRe Response:**

**This analysis is essentially the culmination of erroneous assumptions and erroneous calculations giving rise to erroneous conclusions. UDWRe has attempted to walk through the logic as provided in the commenter’s submission in an attempt to demonstrate why the analysis and its conclusion are inaccurate.**

**First, the assertion that “water sales would need to increase by 320-358 percent” is ultimately tied to a water rate increase approaching 2000 percent. The reason for these large increases is the analysts’ assumption that the only water deliveries (and water revenue) considered in the region is are modeled as a function of the \$7.2 million in water sales revenue reported by the Washington County Water Conservancy District (Cell C:24 of the First and Second Scenario Worksheets). This is simply incorrect. Washington County only accounts for 44 percent of current water deliveries; the district represents an even smaller share of aggregate revenues collected. Consider that a typical residential household in Washington County consumes about 15,000 gallons of water per month (155 GPCD x 2.99 persons per household x 31 days = 14,370 gallons). At the current rate structure in St. George, for example, this typical household would have a water bill of about \$34.87 per month. On average, 44 percent of that water would be sourced to the Washington County Water Conservancy District; the balance would be sourced to the city’s municipal water service utility. Thus, by operating under the assumption that all of the water provided in the region was a function of only the fraction currently delivered by the Washington County Water Conservancy District resulting in only \$7.2 million in water revenue reflects errors in both the quantity demanded and the price paid.**

**To make the magnitude of this error clear, consider that the average price for 1,000 gallons of water in St. George is about \$2.31. A 320 percent increase would take this rate from its current level to \$9.27 ( $\$2.31 \times 320\% = \$7.07 + \$2.31$  existing rate = \$9.27 per 1,000 gallons). Current potable water consumption in Washington County is roughly 16 billion gallons per year (159,600 full-time equivalent residents x 270 gallons per capita day = 15.7 billion gallons). Assuming no decrease in demand, a \$7.07 increase would have generated**

roughly \$111 million in 2015. Assuming for a moment that the commenter's analysis properly applied its own logic, the resulting increase would have generated more than the required \$61 million annual debt service under the \$1.33 billion cost at 4-percent interest scenario.

Of course, the logic was not correctly applied as the higher water rate would never have been applied to the population in 2015 (well before the Lake Powell Pipeline was ever constructed). Rather, the water rate increase would have been applied over a 50-year repayment period. Assuming population growth and conservation projections are met, Washington County would be expected to consume 1.245 trillion gallons of water between 2025 and 2060. The result when applying the 320-percent increases in rates is \$6.6 billion, over twice the amount needed to offset the principal and interest cost in the first scenario (\$1.33 billion, at 4 percent over 50 years) and about \$1.3 billion more than the principal and interest cost in the second scenario (\$1.75 billion, at 4 percent over 40 years with 10-year payment-free period).

The analysis further concludes that rates will actually need to increase between 1,665 percent and 1,995 percent because consumers will reduce consumption in the face of such stark price increases. The flaw here is that a miscalculation in water consumption and current water prices results in astronomical price increases that reduce demand for water and therefore cause even higher price increases. This ultimately leads to apocalyptic economic conditions whereby prices fall, people move out of the region and the economy effectively collapses.

The analysis applies the wrong water rates to the wrong consumption levels; bases elasticity calculations on a fraction of the water rate actually borne by consumers; underestimates existing revenues by applying erroneous tax rates (property taxes) and improperly adjusted revenue bases (water rates and property taxes); improperly sums total expenses; and then, applies the entire formula to present day consumption for a water project that is not expected to deliver a single drop of water for 10 years.

#### **Gail Blattenberger Comment 14:**

##### ***Water Rate and Impact Fee Increases Required to Repay Debt***

***Increasing Impact Fees.*** Columns S and T examine whether increasing impact fees alone, without any additional revenue increases, could repay Washington County Water District's total future debt. Impact fees are the fees new development pays to hook up to the water system, and there has been some discussion about making debt payments through an increase in impact fees. Currently WCWCD has an average impact fee of \$6,102<sup>16</sup> and if the District chose to repay debt just using impact fees, revenues from impact fees would need to increase by 247–276 percent (cell B15), requiring an average impact fee of between \$21,158–\$22,927 (cell B17).

*The large impact fees required in Washington County would be among the highest in the nation,<sup>17</sup> likely deterring new growth in the county or significantly lowering property values (or both). Both effects would add even more problems for WCWCD's repayment obligations: the first would lower the amount of impact fees collected, and the second would lower property values and lower the total property taxes collected by the district. Our analysis did not compensate for these factors.*



[Below is an active link to the above referenced spreadsheet located at the FERC website for the LPP Project (Docket P-12966) (UBWR)]

<http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14159209>

<sup>16</sup> 2013 WCWCD Audited Financial Statement

<sup>17</sup> 2012 National Impact Fee Survey, Duncan Associates:

[http://www.impactfees.com/publications%20pdf/2012\\_survey.pdf](http://www.impactfees.com/publications%20pdf/2012_survey.pdf)

#### UDWRe Response:

It is unclear how the calculation is derived here. There are 0.89 ERUs (equivalent residential units) per acre foot of water. The Lake Powell Pipeline is estimated to yield 82,249 acre feet for Washington County, or roughly 92,215 ERUs. At a project cost of \$1.33 billion (first scenario), this translates into \$14,375 per ERU. At \$1.75 billion (second scenario), it translates into \$18,946 per ERU. Assuming the analyst intended to include interest costs, the fully loaded cost would be \$33,458 per ERU under the first scenario (\$1.33 billion, at 4 percent over 50 years = \$61.84 million annually X 50 years = \$3.092 billion / 92,215 ERUs = \$33,458 per ERU) and \$56,677 under the second scenario (\$1.75 billion, at 4 percent over 40 years with a 10 year no-payment period = \$131 million per year x 40 years = \$5.237 billion / 92,215 ERUs = \$56,677 per ERU).

It is unclear how an impact fee increases of between \$21,158 and \$22,927 would be supported.

#### Gail Blattenberger Comment 15:

##### ***Water Rate and Impact Fee Increases Required to Repay Debt***

*Combination of Increased Water Rates and Impact Fees. The significant debt to participate in the LPP will require WCWCD to raise revenues by tens of millions of dollars every year. The District's only real flexibility in raising revenues for its debt payments comes from deciding the proportion of increased revenues, which will come from increased water rates versus from increased impact fees.*

*Participating in the \$1.4 billion low-cost alternative of the Lake Powell Pipeline from 2008 planning documents could require the WCWCD to raise its revenues by:*

- *raising impact fees 123 percent (spreadsheet cell B21), to an average of \$13,630 per connection (spreadsheet cell B22); together with*
- *raising water rates by 576 percent (spreadsheet cell B20); together with*
- *selling 1200 acres of land owned by the District; and with*
- *continuing to collect property taxes near the maximum levy rate allowed by state law.*

*Participating in the \$1.8 billion high-cost alternative of the Lake Powell Pipeline from 2011 planning could require the WCWCD to raise its revenues by:*

- *raising impact fees 138 percent (cell B21), to an average of \$14,514 per connection (cell B22); together with*
- *raising water rates by 678 percent (cell B20); together with*
- *selling 1200 acres of land owned by the District; and with*
- *continuing to collect property taxes near the maximum levy rate allowed by state law*

*In addition, the 576–678 percent increase in water rates means that Washington County water users would demand more than their current water demand<sup>18</sup> but only 84–90 percent of their current water supply in 2060 (worksheet "Water Demand" cells U11 and AG11), so there would be no need for LPP water.*



## Water Rate and Impact Fee Increases from LPP

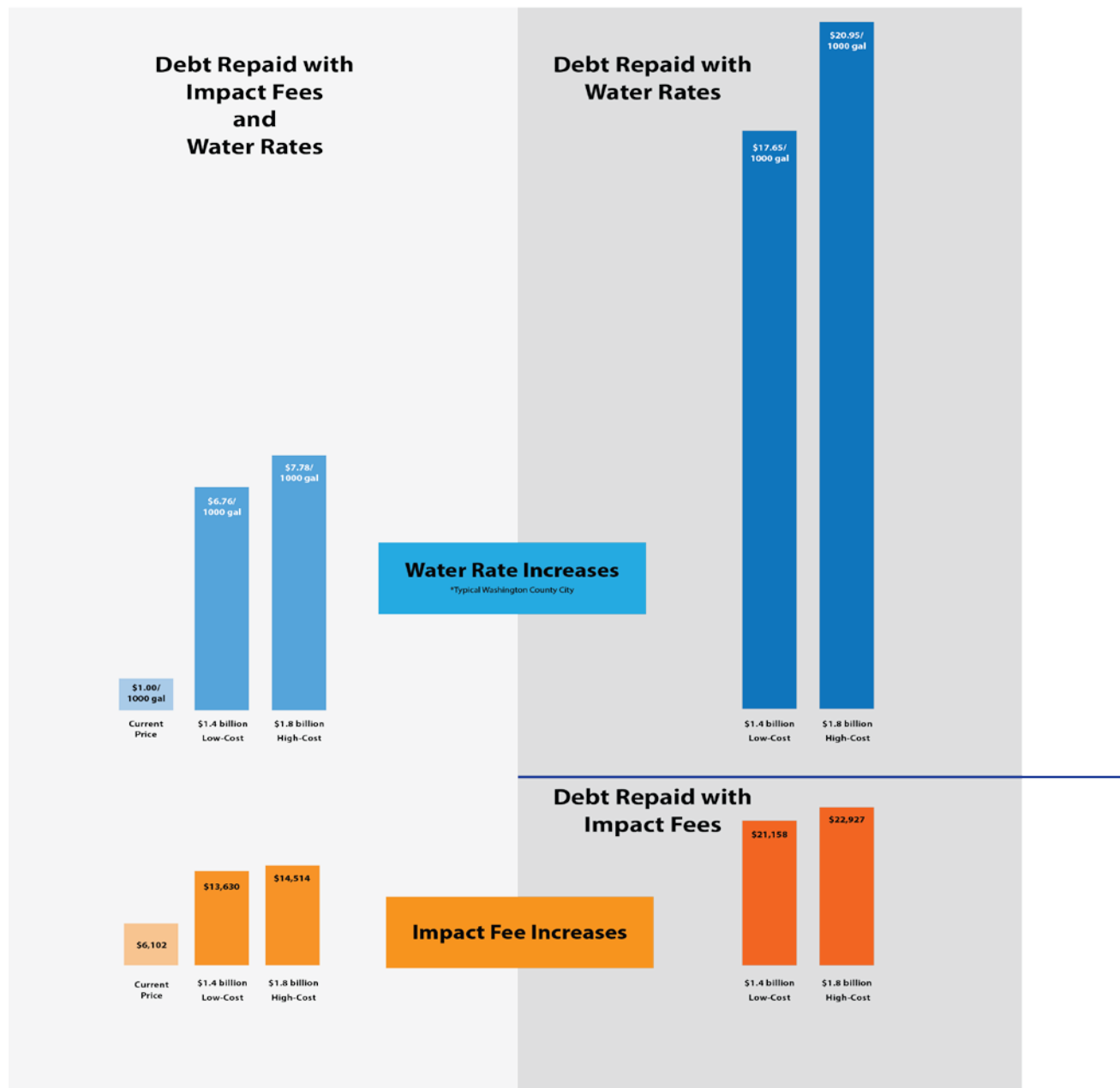


Figure 4: The WCWCD would be required to increase revenues substantially to cover annual LPP debt payments. Since WCWCD cannot raise taxes further, this increase in revenues would have to come from water rates and/or impact fees.

The right side of this graphic shows the increases required by WCWCD if they chose to only increase revenues from one source to repay the debt (cells B12 & B17). The left side of this graphic shows the increases required if WCWCD shifted the increases proportionally on the revenue sources (cells B20 & B22). The upper and lower parts of the graphic show the water price increases and impact fee increases required respectively.

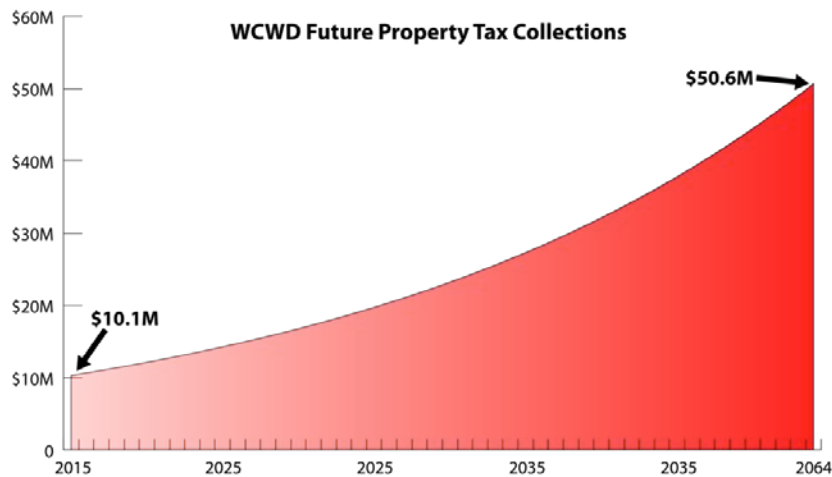


Figure 5. Since WCWCD's property tax collections are already near their maximum authorized levy amount, the future growth in property tax revenues will come from population growth (column B). Yet even with this increase in revenues the District must increase water rates and impact fees considerably to repay the annual debt from the Lake Powell Pipeline.

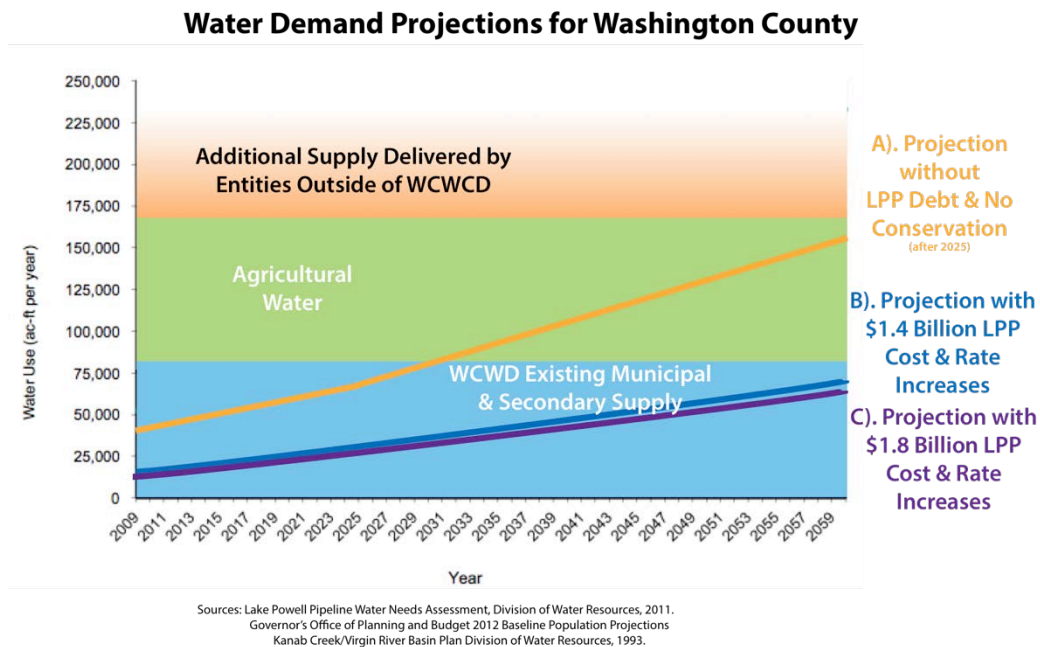


Figure 6. A). 2012 water demand projection for Washington County, which does not include the effect increased water rates would have on reducing water use. This projection assumes no additional water conservation after 2025, keeping water use at 241 GPCD until 2060. This is also the projection if the LPP is only paid for with impact fees.

B). Under the \$1.4 billion LPP cost projection, WCWCD's water demand would decrease by 62% due to increased water rates to repay LPP debt (cell J21). This calculation assumes half the LPP debt would be paid through increased water rates and the other half through increased impact fees.

C). Under the \$1.8 billion LPP cost projection, WCWCD's water demand would decrease by 64% due to increased water rates to repay LPP debt (cell J21). This calculation assumes half the LPP debt would be paid through increased water rates and the other half through increased impact fees.

<sup>18</sup> This is because cell B19 is smaller than cell B8 in both scenarios.

**UDWRe Response:**

Two items bear comment. First, the analysis now references the low scenario alternative as having a cost of \$1.4 billion. This is significantly higher than the \$1.33 billion cost reported in other sections of the document. Second, the conclusion of this element (i.e., "so there would be no need for the LPP") underscores just how inaccurate the ultimate findings of this analysis are.

**Gail Blattenberger Comment 16:**

*Washington County Water District does not have a current repayment plan.*

*The most recent repayment plan for the LPP project was in the Regional Water Capital Facilities Plan and Impact Fee Analysis from 2006<sup>19</sup>. The 2006 CFP has many problems as it relies on data that is nearly a decade old, including growth projections made before the 2008 economic downturn. The 2006 CFP completely relied on impact fees for repayment of the project, increasing the fees by 5 percent per year to increase revenues. This impact fee increase is not sufficient to repay the WCWCD debt, as shown in Section 4 Gail Blattenberger Comment 14 (UBWR) above.*

*The plan also relied on an outdated cost estimate for the LPP project of \$562 million. Newer documentation shows the project will cost between \$1.4 billion and \$1.8 billion.*

*Despite these many problems, the WCWCD continues to rely on this plan to set their impact fee schedule. Due to the decrease in expected new growth in the area and the higher LPP construction costs, the fund is far behind where it should be to repay the project. The 2006 CFP projected the Impact Fee Fund balance to be \$113,770,522 but in reality the 2013 WCWCDAFS showed the district had only \$44,839,323, 61 percent lower than planned in the 2006 CFP.*

<sup>19</sup> WCWCD Capital Facilities Plan, 2006.

**UDWRe Response:**

The Washington County Water Conservancy District periodically updates its Impact Fee Facilities Plan, and relies upon the income available from various funding sources until the public process required for updating any given plan is complete. Until the state of Utah has determined whether and what kind of LPP Project to build within the confines of yet-to-be-determined federal requirements, the final design and a reliable cost of the project cannot be determined. Washington County Water Conservancy District will update its plans as necessary relying upon updated cost figures available over time.

A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds

committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBRW contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

#### Gail Blattenberger Comment 17:

##### *‘Pay-As-You-Go’ Repayment Concept Creates Large Subsidy Funded by State Taxpayers*

*In public discussions related to the repayment problems of the proposed Lake Powell Pipeline, water officials from the Division of Water Resources and the WCWCD coined a repayment concept called “Pay-As-You-Go.” In a 2008 correspondence between WCWCD and the Division of Water Resources, the District’s General Manager outlined this pay-as-you-go concept, asking for confirmation from the Division about the proposal. The concept would allow the WCWCD to defer paying for the entire project by instead buying smaller portions of the Lake Powell Pipeline’s water, which they refer to as “blocks.” According to these officials, the District would only pay the costs and interest associated with one small block of water at a time. This would leave the rest of the unused water and its costs to collect interest without any repayment for decades. This letter from WCWCD’s general manager explicitly stated that he believed,*

*“No interest would be charged until such time as the actual contract to take the water occurs.”<sup>20</sup>*

*This was echoed and confirmed in correspondence from the Division of Water Resources.<sup>21</sup> The letters stated that WCWCD would not be required to pay interest on the entire project and would only have to pay interest on small blocks of the project which could be purchased at any point during the first 50 years after the project’s completion. This would defer paying interest on the entire project, leaving the State of Utah holding billions of dollars of debt for an indeterminate amount of time.*

*Yet according to the LPP Development Act,*

*“The board [of Water Resources] shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.”<sup>22</sup>*

*We interpret this to mean that if “Pay-As-You-Go” is allowed—and we do not know whether it is allowed under the LPP Development Act—then any due-but-unpaid interest must be added to the principal owed by WCWCD, so that the due-but-unpaid interest must be paid back later with interest (a process called “negative amortization”). Our spreadsheet is constructed using this assumption. By making the District’s repayment schedule to the State uncertain and conditional on how the District’s wishes to take water evolve during the next few decades, this “negative amortization” interpretation of “Pay-As-You-Go” increases the uncertainty of the State’s financial condition during those decades, to the detriment of the State and, potentially, to the detriment of the State’s bond rating.*

*In addition, if the District discovered the LPP water was not needed after all, as seems likely, the District might never buy LPP water, leaving the State to pay all the costs of the project. In the free market, a lender would not loan money without a documented income stream, and that would be a prudent policy for the State of Utah to follow when it lends.*

*The alternative to the “negative amortization” interpretation of “Pay-As-You-Go” is to forgive the interest for the Lake Powell Pipeline. This scenario would be much worse for the State and its bond rating since it would constitute an interest-free loan of billions of dollars for several decades from Utah taxpayers to the District. Such a lending scenario is completely alien to free-market lenders (except in bankruptcy proceedings, when attempting to recover funds that in hindsight were imprudently lent). The only grounds upon which interest forgiveness could be justified would be as a permanent subsidy from the State to the District, which would certainly violate the intent of the LPP Development Act. Accordingly, the “permanent interest forgiveness” interpretation of “Pay-As-You-Go” is irrelevant to LPP financing.*

<sup>20</sup> August 14, 2008 Letter from the General Manager of WCWCD to the Director of the Division of Water Resources.

<sup>21</sup> October 14, 2008 Letter from the Director of the Division of Water Resources to the General Manager of WCWCD.

<sup>22</sup> Utah Code, Section 73-28-403.

#### **UDWRe Response:**

**This approach appears to recast the Lake Powell Pipeline Development Act into terms LPP Project opponents would find more acceptable. In doing so, the analysis ignores the history of water infrastructure development in the state of Utah and the legislative history of the Act itself. Moreover, the suggestion that the Washington County Water Conservancy District “coined” the concept of pay-as-you-go funding is inaccurate as this terminology has been common for decades. The analysis seems to suggest that Utah taxpayers will be providing some sort of unequitable subsidy to Washington County. UDWRe disagrees with this assertion; and, a closer look at the allocation of sales, property and income taxes generated by incremental population growth and economic development will likely offset any portion of the Lake Powell Pipeline carrying cost borne by Utahans outside of Washington County.**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

#### **Gail Blattenberger Comment 18:**

##### ***Consideration of the Public Bond Market***

*The USA has a deep and sophisticated municipal bond market whose participants are, for the most part, better equipped than anyone else to decide whether repayment plans for a public project are sound. The best solution would be for the WCWCD to go to those markets, instead of to the State of Utah, for LPP financing. If the markets decide the WCWCD’s LPP financing scheme is sound, the markets will happily supply the needed funds. Otherwise, the market will have judged the WCWCD’s LPP financing scheme unsound, and that judgment should stand.*

**UDWRe Response:**

**The credit markets will be engaged irrespective of whether Washington County or the state issues water infrastructure bonds. Again, the state has a long history of facilitating major infrastructure development needed to facilitate growth.**

**John Weisheit Comment 1:**

*The Colorado River basin's demand for water currently outstrips the supply by 7%. The deficit of the natural supply for the last 16-years has averaged 20%. Lakes Mead and Powell are currently 43% of capacity. Hydropower ceases when the capacity of these two reservoirs reaches 20%. There is a 30% chance that shortages could be declared by the Secretary of Interior by 2020.*

[http://tucson.com/news/local/feds-fix-colorado-river-problems-orweill/article\\_7134987f98d85042a4c2-dfbf9c2edb44.html](http://tucson.com/news/local/feds-fix-colorado-river-problems-orweill/article_7134987f98d85042a4c2-dfbf9c2edb44.html)

*The Colorado River Basin Supply and Demand Study, which is an adaptive management strategy to prevent future reservoir decline has yet to implement any serious plans to reduce demand in sufficient amounts to actually ensure normal reservoir operations in the coming decades.*

*Contrarily, there are serious plans underway to consume more water from the Colorado River and its tributaries. The Lake Powell Pipeline represents just one of many such plans. The net result is: demand continues to outpace supply.*

*If FERC approves this consumptive project in these drying times, in which political will has become as scarce as water, then the Colorado River basin will get hardship and stagnation. When that happens, the People will be asking for much different things. Why not do those new and different things now, when the opportunity is still possible?*

*Please deny this application so that the new ideas can flourish.*

*Thank you for this opportunity to comment.*

**UDWRe Response:**

**Your comment has been noted.**

**James Schleter Comment 1:**

*I write to support the approval of the Lake Powell Pipeline. While there is a vocal group opposing this critical project, I believe a large number of people who oppose the pipeline fail to understand the realities of the situation we face in southern Utah.*

*Growth in southern Utah will continue for as long as Californians retire and the cost of living in Utah is significantly lower than it is in California and Nevada. This is a fact of life and those who oppose further growth in the region need to accept it as such. St. George, in particular, will never be the sleepy little town it once was. With growth comes the need for adequate supplies of water.*

**UDWRe Response:**



**Your comment has been noted.**

**James Schleiter Comment 2:**

*Currently the supply of water in Washington County is sufficient to support our current population and provide for some limited growth. Will we be able to say the same in fifteen to twenty years? I do not believe we will. The pipeline, which will likely take this long to license and construct, addresses the requirements for additional water to support the growth that will inevitably occur.*

*I agree that we can, and must, do a better job of conserving our precious water. Currently, Washington County uses more water per capita and we pay one of the lowest costs of water than any other area in the west. This is not acceptable and we should look at reducing all levels of water use. One way to reduce usage would be to increase the cost of water, particularly for those who persist in trying to grow grass lawns in the desert. Conservation, however, will reduce the water required for current needs. Long term growth will demand additional water supplies.*

**UDWRe Response:**

**Your comment has been noted.**

**James Schleiter Comment 3:**

*The cost of the pipeline will be significant; however, the pipeline is still cost effective when compared with other methods of obtaining sufficient water supplies. If the pipeline is not built and, in fifteen to twenty years, additional water is needed, how will it be provided? The most likely source would be either deep aquifer drilling, which would be an expensive and short-term solution, or reverse osmosis, which would cost a good deal more than building the pipeline since there is no readily available source of water to use as a source and source water would have to be piped in from somewhere. Neither of these is a feasible alternative.*

**UDWRe Response:**

**Your comment has been noted.**

**James Schleiter Comment 4:**

*Opponents of this project maintain that the 1922 Colorado River Compact over allocates water because the flow of the river was higher at that time than at any point in recent history. I accept that as fact. The Compact assumes that the flow of the river is 15-million acre feet per year. Recent estimates put the historical average flow at between 13.2-million and 14.5-million acre feet per year. If we accept the 13.2-million acre foot flow rate and the Compact's allocation of 23% of the Upper Colorado Basin allocation, Utah would be entitled to 1.564-million additional acre feet. Under terms of the 2001 Interim Agreement, additional water is to be provided to California through 2016 to allow for time to implement increased conservation in that state. This reduces Utah's allocation to 1.369-million acre feet. Currently, Utah is not using its entire allotment, even at this reduced level. The Lake Powell Pipeline would not cause Utah to exceed its existing allotment. There have been discussions concerning re-visiting the compact and reallocating water to the various states that depend on the river. Should the remaining portion of*

*the allocation not be utilized prior to the reallocation, Utah would likely lose rights to the unused portion of the allocation forever, harming the population of the state.*

*I believe that the construction of the Lake Powell Pipeline is the best interests of the State of Utah and of the nation and the pipeline should be built sooner rather than later.*

**UDWRe Response:**

**Your comment has been noted.**

**Jaron Lindow Comment 1:**

*The 1.8 billion estimated cost of the Lake Powell Pipeline is \$38,440 for each household in Washington County as of 2013. For comparison, that's 60% of the entire per-household municipal debt crushing residents of Chicago.*

*The Colorado River, which the pipeline will tap, is ALREADY overallocated and has been since 1998, the last time Lake Mead was full.*

*Conservation has not been tried in St George because the water is practically being given away. Property taxes in St George subsidize water bills, the first 5000 gallons are essentially free, and after that the price per gallon is about HALF what users in nearby Las Vegas pay.*

*Many residents of St George, myself included, do not want to be burdened with the massive cost of the pipeline just to subsidize massive development which will lead to crowding, crime, higher taxes, and fewer open spaces. We feel like our city, county, and state governments do not represent us on this matter, as they are beholden to developers and business interests.*

**UDWRe Response:**

**Your comment has been noted.**

**Douglas Dewitz Comment 1:**

*The Salt Lake Tribune has published an article on the recent application of permitting as it concerns the Lake Powell pipeline serving Kane and Washington counties.*

*It is mentioned in the article or attached notes; that the project shall be paid for by the taxpayers of Kane and Washington counties. Kane County currently charges property taxes that, to those on fixed incomes, does not take into consideration the needs of long term older residents, who now do not have the luxury of increasing their incomes upwards to urban governmental wage rates which elected officials state we must be comparable with.*

*No discussion has been presented to the citizens of Kane County as to what taxation will be required to pay for this project. At this time Kane county has a population base that may not support the taxation required to support this effort.*

*A second issue that I would ask in your consideration is a general feeling that when the Colorado River compact was initiated, the river experienced a greater flow than what may be present today*

*and with the projection of the National Oceanic and Atmospheric Administration; may be less in the future.*

*I request that all such considerations as it regards this project, fully examine the future water draw possibilities in lieu of a drying weather pattern on the Colorado River drainage system.*

*Third: as an issue of supply and demand, I request that beyond economic interest a scientific basis be fully considered as to carrying capacity that may be expected in the future and how much population expansion may be considered in maintaining a sustainable growth scenario for the two counties involved in payment of this project.*

*Four: I request that you; as any financial institution would, in considering any business development venture, require a business plan which will outline where this resource of the people's water will be allocated, who the individual beneficiaries will be, and all financial obligations of all parties outlined.*

*Thank you for your consideration in this very complex and expensive issue.*

**UDWRe Response:**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**Elliot Mott Comment 1:**

*It is my sense that the proposed pipeline is a waste of tax payer's money; that Utah's problem is not a water problem but a water management problem -- and that the proposed pipeline should not be authorized.*

*I believe no extension of the preliminary permit is warranted as officials have not made the case that the pipeline is needed. Importantly, I believe water officials have not exhausted alternative solutions such as going to a water market and away from a prior appropriations model to influence water usage. Also, relative to other arid states Utah's water use is exceedingly high -- demonstrating an absence of sound water management practices; infinite growth in a finite system does not work. In sum, Utah must manage its water resources better and building a pipeline as proposed is a waste of tax payer's money.*

**UDWRe Response:**

**Your comment has been noted.**

**John Richard Winn Comment 1:**

*This Project is a huge waste of time and taxpayer money. It will require citizens in other counties to pay for it and receive no benefit. It will encourage unbridled growth in one of the most scenic and unique environments on the planet.*

*The project is not needed for current population and will only increase pollution, species destruction and continued degradation by creating a metropolis that has no logical reason for existing and serves only the greed of the local developers.*

*The transportation systems are maxed out at this time. Growth will require massive earth movement, ruining scenic visits and quality of life for the current residents.*

*Natural population growth can be serviced through water conservation and recycling.*

*Future immigration/growth into this area needs to be redirected. It would make much more sense to encourage it in the Green River, Emery County area. I-70 and UP Railroad can be easily improved in this area; the river's allocation also easily and inexpensively developed in this area.*

*Overall, growth in the Colorado River Compact area needs to be deadended. Goal should be to improve the quality of life in the area, not never-ending immigration.*

**UDWRe Response:**

**Your comment has been noted.**

**Kevin Hooper Comment 1:**

*I am writing today to voice our opposition to the proposed Lake Powell Pipeline. As tax payers with a home and retail buildings in St. George and a cabin in Kane County we stand to be impacted by future tax increases to pay for this unwarranted project.*

*The first idea I would like to propose is conservation. Residents in Utah have the highest per capita water use compared to the general population of the U.S. Most water districts support using draught sensitive landscape practices. Utah should adopt the water saving methods that have been developed in Las Vegas under the leadership of Pat Mulroy, former head of the Las Vegas Water District and Southern Nevada Water Authority. Examples of water conservation abound worldwide. Israel has long dealt with increasing population and scarce water. Agriculture practices in Israel ban flood irrigation, provide tax incentives for drip irrigation and reuse treated wastewater. We should adopt the concept of sustainability in our development practices. In simple terms sustainability is like a good family budget, we live within our means. We can also develop growth limits and or requiring future residential development provide water shares or water sources as part of their approval. Water needs worldwide will continue to be a major issue to sustain our rising population.*

*Lake Powell Pipeline cost and financing has yet to be determined. Unless accurate costs can be established no further progress should take place. As with most major capital improvement projects, the initial cost estimate is much lower than the final cost. I do not believe that the tax payers of Washington and Kane Counties can absorb the long term liability of this pipeline.*

*What if the Lake Powell Pipeline is constructed and there is no water available in Lake Powell? Due to our changing weather patterns we cannot predict that the water flows in the Colorado*

*River can be relied upon. Snow fall in our mountains is unreliable and if we continue with winters like last year, there will not be sufficient water in the Colorado.*

*Ground water is also being withdrawn at levels which cannot be sustained. A state wide water use and availability study should be completed. Any costly water projects should begin only after a state wide water plan is adopted.*

*We need to use our precious tax dollars wisely. The West Desert Pumps placed in the Great Salt Lake under former Gov. Bangerter have not been used since constructed. Please do the right thing and not waste our tax dollars.*

**UDWRe Response:**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

**(1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**

**(2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**

**(a) the delivery of developed water to the district during the first 10 years after the project is completed; or**

**(b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**

**(3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**

**(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections.**

**Ron Smith Comment 1:**

*My reaction to the proposed pipeline from Lake Powell to St. George, in a nutshell, is do NOT build it. It's a bad idea from the get-go.*

*Colorado River water below Lake Powell is a lifeline depended on by many. Drawing water away from an already overtaxed supply so that the St. George area can continue to grow is poor planning. How do we know the supply of water feeding Lake Powell and the river will be constant? The geologic record in the Southwest suggests it won't be and that by EXPANDING water usage from Lake Powell and on downriver, we'll just be building a disaster somewhere further on in time. We should, instead be limiting growth in places like St. George and Las Vegas and hope that by doing that, we'll avert what could be criminal overreach. If St. George and Las*

*Vegas had water from local sources unused by any other places, there would be no problem in continued growth.*

*For the sake of those parts of the Southwest dependent on Colorado River water, do NOT build a pipeline from lower Lake Powell to the St. George area.*

**UDWRe Response:**

**Your comment has been noted.**

**Judith Brailsford Comment 1:**

*I strongly support construction of a pipeline from Lake Powell to Kane and Washington counties enabling us to obtain a portion of Utah's share of Colorado River water to help provide for our present and future water needs. I believe it is only with this project and renewed efforts in conservation that we will be able to provide a future water supply and a healthy environment for my children and grandchildren who now live with me. Thank you for your consideration.*

**UDWRe Response:**

**Your comment has been noted.**

**Austin Anderson Comment 1:**

*There has been much debate as to the need of the Lake Powell pipeline, Much of this debate is based on fiction not on facts, The facts are Southern Utah is growing, We can not conserve are way to the projected growth, although conservation must be part of the solution. The Lake Powell pipeline is vital to the people of southern Utah. The cost of this pipeline will seem minuscule to our children. Our Forefather's have given us everything, let's give back something to our posterity.*

**UDWRe Response:**

**Your comment has been noted.**

**Gregg McArthur Comment 1:**

*The St George Chamber of Commerce recognizes that wisely planned growth is the backbone of a strong business economy and that availability of water is essential to a growing community's infrastructure. We support the Lake Powell Pipeline Project, which will bring water supplies to serve the future needs of both residents and businesses in Washington County.*

*We commend the Washington Water Conservancy District for the extensive work they have done since 1962 in locating and developing water sources in our area. We also strongly encourage the continued development of water conservation programs with a focus on the public's awareness.*

**UDWRe Response:**

**Your comment has been noted.**



**Kade Ence Comment 1:**

*I strongly support construction of a pipeline from Lake Powell to southern Utah enabling us to obtain a portion of Utah's share of Colorado River water and to help provide for our present and future water needs. I believe it is only with this project and renewed efforts in conservation that we will be able to provide a future water supply and a healthy environment.*

**UDWRe Response:**

**Your comment has been noted.**

**Karen Fuller Comment 1:**

*I love the plans for the pipeline. I think it is the only way we can continue to have this wonderful place to live. Please let us have our water and not pass it odoug@harv-higam.comn to other.*

**UDWRe Response:**

**Your comment has been noted.**

**Lori Chapman Comment 1:**

*I am writing in support of the Lake Powell Pipeline and the water rights associated with it. Washington County continues to have steady, planned growth, which is the cornerstone to a successful future for the area. Supporting this pipeline will have a positive effect on the future of our area. This water is extremely vital to our area and future growth will be seriously diminished without this additional water supply. I suggest that it is the right and fair decision to keep Washington County's current water rights in place.*

**UDWRe Response:**

**Your comment has been noted.**

**Natalie Larsen Comment 1:**

*I strongly support construction of a pipeline from Lake Powell to southern Utah enabling us to obtain a portion of Utah's share of Colorado River water and to help provide for our present and future water needs. I believe it is only with this project and renewed efforts in conservation that we will be able to provide a future water supply and a healthy environment for my children and the citizens of Washington County.*

**UDWRe Response:**

**Your comment has been noted.**

**John Brailsford Comment 1:**

*I want to express my full support for the Lake Powell Pipeline Project. I was born in St. George, raised in Las Vegas, went to school and raised my own children in Utah County, and I now reside in Cache Valley, Utah. I truly believe that the construction of the Lake Powell Pipeline Project*

*will provide a variety of economic and other quality of life benefits, not only to Southern Utah but to the entire state of Utah and the entire country. These advantages, in my opinion, far outweigh the costs of building this project in the coming years. Thank you.*

**UDWRe Response:**

**Your comment has been noted.**

**Scott Taylor Comment 1:**

*I absolutely support the construction of a pipeline from Lake Powell to Southern Utah. The future of our local economy depends on an additional source of water to the area. While I agree that we must do a better job of conserving the precious water resource, it is apparent to me that conservation alone cannot provide an adequate water supply for the future of our community.*

*Southern Utah needs to develop Utah's portion of the Colorado River water in order to provide an adequate water supply for our future.*

**UDWRe Response:**

**Your comment has been noted.**

**David Bernstein Comment 1:**

*The proposed pipeline seems to be a foolish proposal. There is little water in the CO River now. It is already over-allocated! Lake Powell is extremely low as it is! We do not have the ability or desire to fund such a project, especially in view of the uncertainty of the cost for building and maintenance. If anything, we need incentive and subsidies to use less water!*

**UDWRe Response:**

**Your comment has been noted.**

**Avery Champion Comment 1:**

*I strongly and vehemently oppose building the Lake Powell Pipeline. The water this would provide is NOT necessary for most counties in Southern Utah, and the cost is far too great to be born by those who will use the water least or not at all.*

*To wit, I own property in Kanab, Utah, and plan to retire there in a few years. My budget is set to strict parameters, and there's no way for me to afford to continue with my plan if I have to fork over an additional \$300 in taxes every year for decades on end, especially as I (and many others) choose conservation to abuse of water.*

*If too many people want to over-develop parts of Southern Utah, then finding and paying for water should be THEIR problem, and done at THEIR expense and their expense alone. Please do NOT burden the already fairly low-income inhabitants of Kane County with this ludicrous, unnecessary project.*

*If you want to do something water-oriented for dry-dessert parts of the U.S. (like Los Angeles and Phoenix and Las Vegas), how about buying desalinization technology from our allies in Israel, and building a pipeline in from the ocean Eastward, instead of tapping Lake Powell?*

**UDWRe Response:**

**Your comment has been noted.**

**Christine Oravec Comment 1:**

*I am a resident of the city of Saint George in Washington County, Utah. I am very concerned that as an elderly person on a fixed income I will pay higher and higher taxes to fund the Lake Powell Pipeline project. I have followed the process for a decade now. I noticed that the estimates of population growth published by the Washington County Water Conservancy District have always overstated any federal records, including census records, for years at a time. I have also noticed the marked lack of support for reasonable water conservation measures by local officials such as proportional metering and over watering of our many public and private golf courses. During this time the Conservancy District has never been able to estimate a total cost for the project, much of it to be paid by current residents of the county. Finally, no pro-pipeline informational materials mention the drastic lowering of Lake Powell and its increasingly uncertain future as a water source for five states in the Southwest. Washington County is a desert, and we cannot support massive water projects that may never carry a drop of water. Please do not permit a pork-barrel project that will ultimately drain the resources of one small county in Utah.*

**UDWRe Response:**

**Your comment has been noted.**

**Sheila Smith Comment 1:**

*As a taxpayer in Washington County, Utah, I and all residents here need to know all the costs of the Lake Powell Pipeline in advance of construction because these will have a large impact on water rates, property taxes and impact fees. Ultimately, the LPP will determine if low income residents can afford to live in Washington County—or not! Despite the \$27 million dollars spent thus far, the Water Conservancy District manager cannot state what the LPP actual costs will be. If the LPP was private enterprise, this manager and others responsible for such a huge projected investment would be fired for inadequate job performance. As a life-long resident of Utah, I observe wasted water everywhere for the past 50 years. Isn't it time that local and federal government work together to implement better methods of conserving existing water supplies and their use? Yes, it is time!*

*As I learn more about the LPP study reports I see how erroneous some of this information is and what little regard for climate change has been given. I have background in both archaeology and geology and see the clear evidence throughout the Colorado Plateau that this area has been drying up for the past 1300 years—when the ancient Pueblos had to relocate due to less and less water for crops.*

*I advocate delay of this Pipeline while the governments involved spend funds on effective use of existing water supplies and imposing much more effective water conservation requirements for industry and residents. As this strategy is implemented and true water use and water availability*

*facts come to light, a future decision about the Pipeline will be based upon sound science, and not a political justification for unsustainable growth in Kane and Washington Counties.*

**UDWRe Response:**

**Your comment has been noted.**

**Kimberly Beck Comment 1:**

*As a local resident who will be impacted by this Lake Powell Pipeline, I have some grave concerns. The water needs projections used by the DWR and the Washington County Water Conservancy District are seriously flawed (as determined by a state audit). Why is this not being addressed?*

*When will we explore less expensive alternatives to the Pipeline? Things like better water management, more conservation and more effective use of existing supplies MUST be considered.*

*And finally, when will the TRUE costs of the pipeline, including financing, operations and maintenance be presented to us? These costs need to be stated including how much of an increase we will see in water rates, property taxes, surcharges and new impact fees. This is not a high income area and local residents deserve to know this information.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

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(4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.

**LeaRae Atwood Comment 1:**

*Please support Citizens for Dixie's Future in their attempts to stop the giant boondoggle called The Lake Powell Pipeline. The State of Utah needs to learn to conserve and not be trying to drain the Colorado of the little water it can carry to much needed areas. This is merely an attempt to try to spur unlimited growth and sprawl in a desert that cannot support it.*

**UDWRe Response:**

**Your comment has been noted.**

**Paul Scheffel Comment 1:**

*I am opposed to giving any further consideration to the "Lake Powell Pipeline". There is no water in Lake Powell, it would be extremely expensive, and we are not addressing local water conservation on any level.*

*Think about the quagmire California is in; too many bond measures over the years costing more money than can be paid back. I do not think Utah (and certainly not Washington County) is ready for this kind of financial risk and the social problems it will bring.*

*Let's do slower growth with conservation and have a happier Utah. No Lake Powell Pipeline!*

**UDWRe Response:**

**Your comment has been noted.**

**Jana Smith Comment 1:**

*The Lake Powell pipeline project is seriously flawed, unaffordable and unnecessary. It will serve what is now only 6% of Utah's population yet is going to be a multi-billion dollar project ultimately paid for by all Utah taxpayers. Three economic studies have shown that this pipeline cannot be paid for by either Washington or Kane Counties; thus, the burden of cost will fall on the entire state of Utah. Studies still have not disclosed the full costs of construction, operations, maintenance and interest on borrowed money. In addition, there are no definitive cost projections on future water rates, property taxes, impact fees, etc. How can a sound decision be made when the cost/benefit ratio is unknown?*

*Amazingly, crucial issues that MUST be considered concerning the viability and need for the pipeline are not being adequately addressed. These issues include water supply (Lake Powell is less than half full and losing massive amounts of water through overuse, leakage, and evaporation which is being exacerbated by climate change), accurate water needs, water*



*conservation measures which currently are not being considered or implemented, and improved water management. The Utah Division of Water Rights is using water needs projections that a state audit has determined are flawed to support this project.*

*The Lake Powell pipeline has already cost Utah taxpayers over \$27 million dollars and this is nothing compared to the billions it will ultimately cost to build and maintain. It is time to stop spending money on a massive unaffordable project being justified by inaccurate or incomplete data.*

**UDWRe Response:**

**Your comment has been noted.**

**Benjamin Wells Comment 1:**

*I traveled the Colorado River in an aluminum canoe from Hole in the Rock to Page when there were still 7 free river miles before the ponding. I have followed the ups and downs of the river and reservoir since. Please stop the pipeline, fill Mead first, and think about decommissioning Glen Canyon Dam.*

**UDWRe Response:**

**Your comment has been noted.**

**Bob Hannigan Comment 1:**

*The first priority must be efforts to implement less expensive solutions. These would include improved water management, much much greater emphasis on conservation and more effective use of existing supplies.*

*The current studies fail miserably when it comes to analysis of climate change as reflected in current and projected flow rates. Also, blatantly missing seems to be substantial analysis on the ecosystem of the Grand Canyon itself. It is impossible to remove 28 billion gallons of water from one system and not have significant impact.*

*As with far too many projects, total costs are not portrayed. Financing, operations and maintenance need to be correctly listed.*

*There have been references to a “flawed audit” of the Division of Water Resources.” Please determine if the data is actually wrong and correct it. This one issue could improperly state the need for the pipeline.*

**UDWRe Response:**

**Your comment has been noted.**

**David Sell Comment 1:**

*I urge you to discontinue this disastrous project that will only serve to further damage and destroy the Colorado River. The River is already over-committed and Lake Powell and the*

*downstream lakes are considerable below desirable levels. The agricultural water users in Utah need to find another source of water and leave the Colorado River, what's left of it, alone!*

**UDWRe Response:**

**Your comment has been noted.**

**Eric Hintsa Comment 1:**

*Please do not proceed with the Lake Powell Pipeline. The negative impact on the Grand Canyon ecosystem of draining 28 billion gallons of water out of the Colorado River each year makes the negative aspects of this project too significant. Conservation and better water use are much better plans.*

**UDWRe Response:**

**Your comment has been noted.**

**Harry Newell Comment 1:**

*Any plan to remove more water from the Colorado that does not account for ecosystem effects nor for effects, current and future, from climate change, is unscientific and not complete enough for fair evaluation. Frankly, this sounds crazy. I strongly urge you to require further study that fairly evaluate less expensive and destructive ways to meet water needs, present and future.*

**UDWRe Response:**

**Your comment has been noted.**

**Jim Winkler Comment 1:**

*I am a St George resident been here for 20 years. This is a very clean and very nice place to live. There is a lot of plants, flowers & bushes along the roadways/parkways etc.*

*There has been discussion about the water situation for quite a few years now. Since this topic of water has been going on I have seen more plants, flowers & bushes being planted in public areas. I'm thinking the powers that be are working on a water line from Lake Powell and all the water using vegetation is still being planted. WHATS WRONG WITH PICTURE!! We are in the upper desert. I would think we would be like Las Vegas, put statues and colored gravel etc. that does not use water. When I drive over I-15 exit 5 by the Convention center and new hotel and see all the water lines being installed I can't help but think, "what you are thinking"! I love seeing the plants etc. but is it really logical to plant plant plant when we are in this situation??*

**UDWRe Response:**

**Your comment has been noted.**

**Nick Bacria Comment 1:**

*I strongly recommend that instead of taking more and more water out of our river, we can exercise better water management and saving options. Colorado River has already become a little brook. There is not much left in it for anything. Taking water out and wasting it is not an option, anymore. Please be mindful of that.*

**UDWRe Response:**

**Your comment has been noted.**

**Robert Amoroso Comment 1:**

*I just spent 20 minutes typing a comment and when I sent comment it deleted all of it. I have only a paper copy. Please contact me. The basic premis of my comment is that the WCWCD has not made public a commissioned and publically paid for Draft Report that proves false what they are trying to put over on the citizens of Washington Co regarding the cost, cost effectiveness, and necessity of the LPP. Since the infomation didn't support their goal of using the bogus LPP to provide water to Wash. Co so the good old boys can sell their land on the backs of citizen's paying for the pipeline. Since you are a government agency you can not, by law, support a project that doesn't provide all publically paid for documents for gov. and public review, specifically the 113 page LPP Study #10 by Dr. Darryll Olsen Ph.D. which refutes WCWCD bogus info. On cost, cost effectiveness, and necessity of the pipeline His number is [personal contact information redacted - UDWRe]. I have the first 13 pages which is the engineering summary and is very well written. I wonder, do you have the 113 page report or was it purposely not given to you as it wasn't to the LPP web site? Since you are a government agency and ALL infomation pertaining to a government project -good or bad must be presented to you and the public then you must not support the LPP.*

**UDWRe Response:**

**Your comment has been noted.**

**Tom Taylor Comment 1:**

*The Lake Powell Pipeline project should not occur as it would be destructive and disruptive to wildlife habitat. Also, I believe, to this day the Navajo tribe (& possibly other native tribes in the area) still do not have sufficient water for their needs. This project, it appears to me, would only serve the non native population. Water conservation, water "banking", restrictions on development, are some of the correct means to the issue.*

**UDWRe Response:**

**Tribal consultation will continue to be an important factor as the process moves on to an EIS.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**The area's hot, arid climate coupled with high tourism and a high number of second homes drives the per capita use of water up but additional conservation is achievable.**

**Arthur Linnell Comment 1:**

*Very briefly, I live upstream of the Colorado River, and often vacation and recreate in Utah, downstream. The proposed pipeline to draw even more water out of the Grand Canyon ecosystem is, in my view, woefully lacking in the following respects: no demonstration of an actual need, no consideration for the impact on the River and the system, poorly designed reviews and audits, and no clarity about the real costs. Hold them accountable!*

**UDWRe Response:**

**Your comment has been noted.**

**Jane Crick Comment 1:**

*I am commenting because I am against a pipeline project. In coming years we will have a water shortage regardless but this project will hasten our shortages. We must do everything possible to conserve and protect what is now in place and cease any plans for a pipeline.*

**UDWRe Response:**

**Your comment has been noted.**

**Judy Bell Comment 1:**

*I have been a recreational user of the Colorado River for fifty years and have made over one hundred trips through its canyons. In that time I have seen the decline of the river through drought and diversion. In that time the town of St. George's population has grown dramatically. In that same time period the population has implemented almost no conservation methods. In fact, the people of St. George use twice as much water per person as the citizens of Salt Lake City.*

*As an eyewitness to the decline of Lake Powell over the past fifty years I can say that the data used to justify the pipeline is faulty. As a citizen of Utah I am opposed to the price tag of the unnecessary pipeline. We are a state of limited resources. To waste 16 billion (today's quote for the pipeline) in a state with so many unmet needs is irresponsible and ignorant.*

**UDWRe Response:**

**Your comment has been noted.**

**Larry Kimball Comment 1:**

*This process is flawed and incomplete...there must be an accounting of what this massive water withdrawal will do to the Colorado River. This should not be given any permit until ALL questions are answered.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Comfort Comment 1:**

*No pipeline through/near any land that feeds water that ends up in the Colorado River!  
NO LAKE POWELL PIPELINE!!  
ECOLOGICAL DISASTER WILL ENSUE!*

**UDWRe Response:**

**Your comment has been noted.**

**Lynn Brklacich Comment 1:**

*According to what I understand, if the pipeline goes through I will cost at least a couple of billion dollars to complete and the share of water that the state of Utah is entitled to is 400,000 acre feet more than it is now using.*

*The hot springs in LaVerkin, Washington County (Locally known as Pah Tempe), produces about 7 million gallons of mineralized water each day.*

*Doesn't it make much more sense to build a plant locally to demineralize and use that water than to build a pipeline hundreds of mile long at an outrageous price to get less water than is available in Pah Tempe?*

*Even if it cost the same price to build a plant to demineralize the water, it is a much more logical solution than to build the pipeline. And it would help out the local community and the local economy as well.*

**UDWRe Response:**

**Your comment has been noted. Please refer to Final Study Report 22 – Alternatives Development which describes the issues relevant to “demineralizing” the hot springs water.**

**Pat Duncan Comment 1:**

*Really you have not considered the negative impact on the Grand Canyon water system. Please do not put the pipeline through.*

**UDWRe Response:**

**Your comment has been noted.**

**Peter Mills Comment 1:**

*I am deeply concerned about indebting Washington and Kane Counties with the Lake Powell Pipeline Project. As I read the Utah Legislative Auditor General's report (May 2015) it clearly states that the data from the water districts and population growth projections are flawed. Yet the Utah State Division of Water Resources is using this faulty information as a basis for planning this massive and extraordinarily costly project. This project puts tremendous pressure on the area to grow at a high rate so repayment of the massive loan (amount which is unclear and the estimates vary dramatically) can be accomplished.*

*The Auditor General's report goes on to state that conservation is a first line approach to accommodating growth in Southern Utah and a reasonable alternative to building the Lake Powell Pipeline. As you well know, we Southern Utah residents have not yet done our part to live in a manner that reflects that we reside in the desert. Our region has a shameless high per person per day use of water and notable low water rates which do not incentivize residents to conserve water.*

*The pressure for the area should be in the arena of water conservation.*

*Resorting to building the Lake Powell Pipeline Project is premature and I am opposed to this project being licensed and moving ahead.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The planning processes for this project go into far more detail than statewide or regional plans.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**Phillip Notz Comment 1:**



*Please stop this disastrous project that would drain another 28 BILLION gallons of water out of the Colorado River every year. The Colorado River is already stretched to the breaking point -- taking more water out of the river to subsidize growth and waste in Utah's desert is nonsensical.*

**UDWRe Response:**

**Your comment has been noted.**

**Rosalinda Shearwood Comment 1:**

*I am writing to strongly oppose the proposed pipeline from Lake Powell to divert water for further development in Utah.*

*The Colorado River flows through Eagle County only about 20 miles from my home and as a resident here I feel very protective of our natural resources, including this special river. It is being over used by greedy developers who have no interest in the protecting it, rather using it for their personal interests. The amount of water diverted would threaten the health of the river downstream from Lake Powell, as well as the millions of people who rely on the water from Lake Mead. I appeal to common sense that the Colorado River should not be further exploited to satisfy more development in arid land that has no water of its own.*

**UDWRe Response:**

**Your comment has been noted.**

**Steven Brockmeyer Comment 1:**

*I can not believe that you wish to take more water from an already stressed system. We haven't enough water to fill Lake Powell and yet you wish to remove more. This is a ridiculous approach, poorly thought out amazingly expensive decision. Short sited and foolish. Please reconsider this approach.*

**UDWRe Response:**

**Your comment has been noted.**

**Susan Granias Comment 1:**

*We cannot keep diverting water for people living in desert areas. All conservation methods should be tried first. Everytime we divert rivers it kills off the ecosystem that live around the area of that river. This lack of water is only going to get worse and this is just stealing from Peter to pay Paul. As it is, the Grand Canyon rarely receives any water from the CO. River. It is used up way before it reaches there.*

*I lived in SW Colorado and was high desert. The land would not support dense housing. The area I was in had a minimum of 5 acres per house. We didn't have Midwest gardens, pools and grass. We have to learn to adapt to where we choose to live. The money that is going to be used for the Powell Pipeline Project could be used better in developing water managing techniques.*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously. The LPP study team has studied this project in-depth, researching extensively beyond the basic planning found in the state water plan.**

**Susan Munroe Comment 1:**

*I am writing to strongly urge you NOT to approve the preliminary permit for the Lake Powell Pipeline Project. I am a river guide working primarily on the Colorado River, with an intimate connection to the river itself and the fragile desert landscape that makes up Southern Utah.*

*I believe that this project is a waste of taxpayer money and detrimental to the Colorado River ecosystem. The state of Utah wishes to advance this project not because of a shortage of water; it wants to secure its claim to additional acre feet of water granted Utah in the Colorado River Compact. However, the amounts of water stipulated in that compact represent an overly optimistic view of the total water available in the Colorado River system: the river is already over-allocated, and Lake Powell shrinks more each year. The Lake Powell Pipeline will only drain the system further, and to little real benefit to Utah's residents.*

*A recent audit of the state's water usage ([http://www.deseretnews.com/article/865627966/Audit-revealsflawedprojectionsonUtahswaterneeds.html?pg=all&utm\\_source=February+2016+Lowdown&utm\\_campaign=January+Lowdown&utm\\_medium=email](http://www.deseretnews.com/article/865627966/Audit-revealsflawedprojectionsonUtahswaterneeds.html?pg=all&utm_source=February+2016+Lowdown&utm_campaign=January+Lowdown&utm_medium=email)) indicates that if the state enacts meaningful conservation strategies (pricing water at its true cost, converting surplus agricultural water to municipal use), current supplies will provide enough water for the next 45 years, including projected population growth. Instead of spending millions on a pipeline from a reservoir that may not even exist in 20 years, instead of finding ways to get MORE water, Utah (and the rest of the arid west) needs to find ways to do more with what we already have.*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously. The LPP study team has studied this project in-depth, researching extensively beyond the basic planning found in the state water plan.**

**William Gray Comment 1:**

*I am writing to denounce any support for the Lake Powell Pipeline Project. This is another boondoggle promoted for 'profit-only' interests no considerations for the environment. Information promoting this venture has been shown to be skewed and flawed, less expensive alternatives have NOT been considered AND the water usage limits have already been exceeded with the present system. Please stop further action towards this flawed and narrow-minded plan!*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional**

**population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Rich Cline Comment 1:**

*The pipeline to Lake Powell should not receive approval.*

*The Colorado River system water appropriation is not viable for the future water needs of the states it was projected to serve. Several drought years have left the reservoir systems and groundwater severely depleted. There is not enough water to go around. There is a high probability that the drought is not a short cycle and that the river may not recover and refill the reservoirs to sustain current demands.*

*St George has the highest rate of water consumption and lowest cost of water in the region. There has been minimal attention to conservation of water resources and sustainable growth in Washington County. The Powell pipeline is the dream of a group of reckless developers to continue unsustainable growth at the public expense. The project has been reviewed by numerous economists leading to a letter of concern to the Governor of Utah stating the cost and impact of the project will be much higher than projected for the community I live in.*

*Please do not provide approval for a bad idea.*

**UDWRe Response:**

**Your comment is noted. Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**UDWRe and the participating entities will work closely with the Governor's Office and State Legislature in order to ensure the financial framework to fund the LPP is reasonable from state and regional perspectives, in accordance with the Lake Powell Pipeline Development Act, and based on accurate data and information. These goals can be achieved concurrently with a NEPA/EIS process.**

**William C. Barlet Comment 1:**

*The Lake Powell Pipeline Project proposal has greatly disturbed me since I moved to southern Utah from Denver four years ago. The reported lack of transparency provided by the project's proponents is troubling. Their alleged refusal to share complete financing repayment plans arguably suggests subterfuge, at some level. At the very least, refusing to share financing plans*

*and data methodology should be nonstarters for any project in the public domain. If proponents of a policy, procedure or plan, cannot or will not provide supporting information, or cannot or will not explain why that policy, procedure or plan makes sense and should be adopted and/or sustained, addressing all questions and competing concerns, then perhaps that policy should be changed or rejected. The narrative of the Lake Powell Pipeline proposal, and any substantive, informed debate among southern Utahns is becoming bogged down by the lack of supporting detail from the project's proponents. Perhaps that is the tactic intended by proponents. Perhaps the intent is to obfuscate the core issues until the public just becomes confused or distracted. Southern Utahns should not abdicate their right and duty to understand the issues surrounding this project; southern Utahns should not simply acquiesce to their leaders and assume those leaders know best, or will necessarily act in their best interests. That will be a shame. It is not difficult to know how much water a family uses per capita. Southern Utahns should be asking their neighbors about their water usage. Are the water usage projection numbers being used by the pipeline's proponents' reasonable? They clearly appear significantly overstated to me, given my own personal usage patterns. We conserved water in Colorado. The rules were strict but tolerable. They made sense. Citizens understood the stakes involved and accepted the rules as a requirement to live in Colorado. There are essentially zero rules for water conservancy here in southern Utah. Why? I now live in a desert and yet my water usage is managed by a "whatever" governmental policy. It makes absolutely no sense to forego conservation measures and make the leap directly from Washington County to Lake Powell via a water pipeline. To dismiss conservation as a viable solution, based on arguably greatly inflated water usage projections, is bad public policy. Insufficient details have been provided to comprehensively assess financial issues; however, what has been shared suggests this project is frighteningly bad fiscal policy as well. This project, as currently proposed, lacks sufficient rationale for constructing a water pipeline, or for how that pipeline will be funded. To say nothing of the myriad issues surrounding the water levels in Lake Powell and the sustainability of Lake Powell as a viable water source. Perhaps the proponents of the Lake Powell pipeline are considering a second pipeline from Lake Mead upstream to Lake Powell to replenish Powell as the water level is drawn to further lows. That circular reasoning would seem to fit very nicely with the rhetoric, and lack of substantive detail, the pipeline's proponents have provided thus far. As I have read of the political wrangling surrounding the proposed pipeline, this project has never passed the smell test for me. I am very leery of pricey public projects which are cobbled together behind soundproof doors. I don't like propaganda of any kind, and the narrative provided by the pipeline proponents sounds like propaganda. I want clear, objective rationale. I want clear explanations of data methodologies and projections. I don't want excuses why I cannot be told how the project will be funded. I want proponents to explain why conservation has not been implemented. Propaganda, by definition, is intended to manipulate minds. I prefer facts and data. If facts and data are not provided, or are sanitized or propagandized to manipulate minds, we should be alarmed. Truth is always useful. Always!*

#### **UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

- (1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**
- (2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**
  - (a) the delivery of developed water to the district during the first 10 years after the project is completed; or**
  - (b) the project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**
- (3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**
- (4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**A financing plan is premature at this stage. First, the FERC license will require UBRW to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBRW contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

## **General Comments on Environmental Analysis:**

### **FERC Comment 1:**

*Chapter 5 of the PLP includes a draft environmental analysis. Section 4.41 of the Commission regulations describes the contents of an Application for License for Major Unconstructed Project or Major Modified Project and requires that your license application contain an analysis of proposed project effects on environmental resources with specific resource reports in the general format of a National Environmental Policy Act (NEPA) document. Although your PLP follows the general format of a NEPA document with specific resource chapters, your analysis of environmental effects requires considerable modification to comply with the Commission's 2008 Guidelines for Preparing Environmental Documents (see <http://www.ferc.gov/industries/hydropower/gen-info/guidelines/eaguide.pdf>). Your assessment of effects of the proposed project on environmental resources has minimal detail or quantification as to how specific features, activities, or operations of the proposed project would affect specific resources. Your conclusions, which generally state that the proposed project would cause no, or only minimal, environmental effects, are neither fully explained nor supported by study data or evidence from scientific literature.*

*As a general rule, the environmental analysis section for each issue within a resource area should be structured as follows. First, you must describe how operation and maintenance of your*



*proposed project would affect specific resources. Second, you must identify what measures you propose and others recommend addressing any effects. Third, you must discuss and quantify, to the extent possible, the benefits of the proposed and recommended measures for that resource. Discussion of environmental effects in the license application should be based on the information contained in the record (such as study reports) and information available in the literature and of relevance to the issue being discussed.*

**UDWRe Response:**

**The final study reports have been updated and Exhibit E incorporates updates from the final study reports.**

**BLM Comment 2:**

*Examination of the Lake Powell Pipeline, Preliminary Licensing Proposal, Chapters 1-5 (and appendices), did not reveal any evidence of how environmental justice issues (as described in Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations (EO 12898)) were addressed in the preliminary planning effort. In addition, there is no discussion of any type of future consideration of environmental justice issues. While a more detailed analysis would be necessary to determine if specific pockets of low income or ethnic populations of concern are present in the project area, the presence of the Kaibab Paiute Tribe in immediate proximity to the proposed project corridor should initiate consideration of environmental justice issues, even if no other populations are identified. As noted above, the Kaibab Paiute Tribe is an identifiable community of American Indians requiring consideration under EO 12898, and BLM environmental justice guidance as stated in BLM publication H-1601-1, Land Use Planning Handbook, Appendix D: Social Science Considerations in Land Use Planning Decisions. According to notes taken during government-to-government consultation between the Kaibab Paiute Tribe (the Tribe) and representatives of the Bureau of Land Management (BLM), concerning the proposed Lake Powell Pipeline project, the Tribe specifically identified many plants that were of traditional cultural, social, and religious importance. The Tribe also expressed a concern that the construction of the Lake Powell Pipeline might damage or impede their future abilities to gather these plant resources. This situation is one that should be examined for environmental justice implications. If the proposed project would indeed damage or impede the Tribe's ability to practice traditional cultural, social, and/or religious activities, then a disproportionate adverse impact to an environmental justice population of concern has already been identified. This is just one example of the environmental justice impacts that may be associated with this project. The BLM, in the guidance cited above, prescribes how environmental justice concerns should be addressed during planning. At a minimum, the PLP background studies should address the need to examine potential environmental justice concerns, and provide a preliminary assessment of the location, type, and general concerns of any populations of concern that might be affected by the proposed project.*

**UDWRe Response:**

**A specific study plan was not prepared nor required by FERC for Indian Trust Assets and Environmental Justice. Exhibit E of the License Application will form the basis for preparing the draft EIS. Preparation of the FERC Draft EIS, with Reclamation and other DOI agencies participating as cooperating agencies, will include preparation of Indian Trust Asset and Environmental Justice sections.**



## **General Comments on Proposed Project Boundary:**

### **FERC Comment 77:**

*In the PLP, appendix E, you provide maps of the proposed project. Although the proposed project maps included with the PLP are not required to conform to 18 CFR §4.41(h) of the Commission regulations, your license application is required to include a proposed project boundary map (exhibit G) that conforms to 18 CFR §4.41(h) of the Commission regulations and that shows all Tribe of the principal works necessary for the operation and maintenance of the proposed project. In addition, include the location and acreage of all federal lands and all recreation facilities enclosed within the proposed project boundary in your exhibit G.*

### **UDWRe Response:**

**The license application includes a project boundary map (Exhibit G) that conforms to 18 CFR §4.41(h) of FERC regulations and shows all of the principal works necessary for the operation and maintenance of the proposed project. In addition, the location and acreage of all federal lands and all recreation facilities enclosed within the proposed project boundary have been included in Exhibit G.**

## **Comments on PLP:**

### ***General Comments:***

#### **Reclamation Comment 1:**

*In reviewing the PLP the following need to be added: Indian Trust Assets and Environmental Justice. Under Environmental Justice see question on page 5-1094.*

### **UDWRe Response:**

**A specific study plan was not prepared nor required by FERC for Indian Trust Assets and Environmental Justice. Exhibit E of the license application will form the basis for preparing the draft EIS. Preparation of the FERC Draft EIS, with Reclamation and other DOI agencies participating as cooperating agencies, will include preparation of Indian Trust Asset and Environmental Justice sections.**

#### **BLM Comment 1:**

*Document structure – for future reviews a better system needs to be employed. The TOC provides sections however it does not ID what volume the review needs to go to. This makes it very hard to go directly to a section. With the number of volumes and pages involved with each volume, a better system needs to be addressed.*

### **UDWRe Response:**

**Your comment has been noted. The limitations on the size of computer files associated with submitting documents render developing a better system infeasible.**

**BLM Comment 3:**

*General-- all documents including study reports: The State of Utah needs to procure a copy editor to fix all of the spelling, awkward sentences, and formatting issues with these reports. These documents are much too "raw" for this stage in the process.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 4:**

*In many instances details of this project are only disclosed in Chapter 5. This makes it quite difficult for the various resources to even find content needed for their review.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 5:**

*In numerous effects sections associated with the No Lake Powell Pipeline Alternative, it is noted that lawn watering with potable water in St George contributes to ground water recharge to the degree that it is key to the water quality and quantity, and ecological health (vegetation, aquatic species, etc.) of the Virgin River. Please provide the data and research to back up these conclusions.*

**UDWRe Response:**

**The data and analyses have been provided in the final study report on Alternatives Development.**

**BLM Comment 6:**

*In several effects sections associated with the No Lake Powell Pipeline Alternative, it is noted that replacing the current high water use landscaping in St. George with drought-tolerant landscaping would create adverse effects such as dust, air pollution, and the inability of residents to use their yards or parks. Please provide the data and research to back up these conclusions.*

**UDWRe Response:**

**Refer to Section 3.5 of Chapter 3 of the text.**

**BLM Comment 7:**

*Throughout the document there are sections for **Potential Effects Eliminated From Further Analysis** – isn't it that alternatives and resources are eliminated from further analysis, not effects?*

**UDWRe Response:**

Potential effects eliminated from further analysis are identified where applicable and include those potential impacts that are addressed as part of the Proposed Action or alternatives through design, Standard Operating Procedures, and Best Management Practices, or may be outside of the area of effect for that particular resource. This helps focus the impact analysis on resources that would have potential impacts from the project and identify mitigation measures as applicable to avoid, minimize, or reduce the impacts to a level below the significance criteria.

**BLM Comment 8:**

*Historic Trails, ACECs, and Wilderness/WSAs are discussed throughout the document in other resource sections. Please also address them as independent stand-alone resources.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance**

**BLM Comment 9:**

*Concerned with where the line crosses the Kanab Creek. This is where the relief is. IT also is within a Kanab Creek ACEC as the document states has visuals as a concern but no guidance on how to deal this visuals. And most of this crosses is within Class 4 with a small segment within Class 2. This area receives very little visitation and isn't viewable from anywhere but within the canyon. Visual Simulations are referenced for the Kanab Creek but not found in the document.*

**UDWRe Response:**

**Visual simulations of the Kanab Creek crossing area have been added to the text.**

***General Comments on Figures:***

**BLM Comment 11:**

*Figures should be in the document for this review. In the folder for figures not all figures have been included.*

**UDWRe Response:**

**All figures have been included in the license application.**

***TOC Comments:***

**BLM Comment 10:**

*PRELIMININARY LICENSING PROPOSAL – should be Preliminary.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

***Preface Comments:***

**BLM Comment 12:**

*(Page P-1)*

*First paragraph, third line. Insert “direct/indirect” after “minimize”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 13:**

*(Page P-1)*

*Paragraph after the first bullet list. What is the referenced “recent necessary change in the Proposed Action alignment”? The BLM is not aware of this change*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 14:**

*(Page P-2)*

*First paragraph, 5th/6th lines: What about field surveys of dry washes on BLM land? They shouldn’t just have been done on Arizona State Land Department lands.*

*First paragraph, 10th line: If this is the first time the acronym “UBWR” is used, it should be defined here.*

*Second paragraph, 4th line: The acronym “LPP” has already been defined (in the previous paragraph), so don’t do so again here.*

*Paragraph following 2nd bullet list:*

*1) 1st line: Should be “revised draft study reports”;*

*2) 2nd line: Page P-1 uses “Commission” to refer to FERC .... be consistent in whatever this agency is called.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 15:**

*(Page P-3)*

*This is currently a blank page ... please delete.*

**UDWRe Response:**

**The blank page has been deleted.**

***Abbreviations and Acronyms Comments:***  
**BLM Comment 16:**

*The following acronyms were cited in the text of the PLP but not included in the list of abbreviations and acronyms. Please add them.*

- AAC
- ACHP
- ADOT
- AFY
- ARRA
- ASFO
- ASLD
- AZPDES
- BA
- BEPA
- BMP
- BO
- CFR
- CRSS
- CWA
- CZMA
- DOI
- DWQ
- EFH
- FEMA
- FIRM
- fps
- FONSI
- FRS
- GW
- GWh
- HCH
- HCL
- HPMP
- ILP
- KBPI
- KFO
- Km
- LROC
- LTEMP
- MAF
- Mgd
- Mm
- MMbtu
- NAAQA
- NFIP
- NHPA
- NPDES

- NRCS
- NTU
- NVC
- NWSR
- PA
- PAD
- PEIS
- PGA
- PIF
- PLP
- Psi
- RMR
- ROD
- RM
- RQD
- RWSA
- SCORP
- SGFO
- SGWRP
- SHPO
- SPCCP
- TMDL
- TSS
- UAMPS
- UDOT
- UPDES
- VFD
- VRDSM
- USGS
- WECC
- WSR
- WSRA
- WWTP

**UDWRe Response:**

**The abbreviation and acronym list has been revised to address the comment.**

## **Chapter 1 Comments:**

**Reclamation Comment 3:**

*(Section 1.1, Page 1-1)*

*Bureau of Reclamation abbreviated is Reclamation throughout most of the text but in a few places the acronym USBR is used. The list of acronyms in Table 4-1, page 4-1, is USBR. In referencing documents both Reclamation and USBR are used. Should be consistent and use Reclamation throughout the document.*



**UDWRe Response:**

**The Bureau of Reclamation has been referred to as “Reclamation” throughout the document.**

**Reclamation Comment 4:**

*(Section 1.2, Page 1-1)*

*The PLP states that: The EIS prepared by the Commission, based on the Exhibit E to be filed by UBWR, will be intended to function as the EIS for Reclamation, NPS and BLM in meeting their respective NEPA compliance requirements on their decisions to grant rights-of-way for the LPP.*

*It should be noted that Reclamation needs FERC’s EIS to act as NEPA compliance and cover Reclamation’s actions of whether Reclamation should issue a water service contract and a realty agreement to allow for construction and operation of the intake structure on Reclamation land near the dam. Reclamation’s focus is to assure that the eventual EIS will support a Record of Decision on Project-related actions required by Reclamation.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 5:**

*(Section 1.2, Page 1-4)*

*Communications facilities (SCADA) – Define SCADA (supervisory control and data acquisition) acronym at first use.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 17:**

*(Section 1.1, Page 1-2)*

*2nd line: Change “who have” to “which has” (UBWR is not a person).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 18:**

*(Section 1.2, Page 1-1)*

*First paragraph, line 2: Add a space between “18” and “CFR”.*

*Second paragraph, line 19: Delete “Utah” (before “SITLA”) – there is no SITLA in Arizona.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 19:**

*(Figure 1-1, et al)*

*Designate this and all maps using the NEPA term “Proposed Action”*

**UDWRe Response:**

**The Figure has been revised to address the comment.**

**BLM Comment 20:**

*(Figure 1-1, et al)*

*Uses “Hydro system”, but the text talks about the “penstock”, need to be consistent and indicate this on the maps*

**UDWRe Response:**

**The figure and text have been revised to address the comment.**

**BLM Comment 21:**

*(Figure 1-1)*

*Project Map – Wilderness Areas, WSA and any other special designations should be incorporated into the main project map for reference.*

**UDWRe Response:**

**UDWRe’s view is that it is not appropriate to show Wilderness Areas and WSAs on this figure, which is intended to give a general overview of the Proposed Action in relation to major political boundaries.**

**BLM Comment 22:**

*(Section 1.2, Page 1-3)*

*First paragraph, line 7: Change to “... state agencies, American Indian tribes, ...” Bullet list: 1) 4th bullet under “Water Conveyance System” – change to “KCWCD” (either use the acronym or not ... don’t alternate between using and not using).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 23:**

*(Section 1.2, Page 1-4)*

*4th bullet under “Electric Power Transmission System” – define here what the acronym “SCADA” is.*

*Last paragraph in section, line 6: Page P-1 (and Section 1.3) use “Commission” to refer to FERC ... be consistent in whatever this agency is called – “FERC” or “Commission”*

**UDWRe Response:**

**The suggested edit s have been incorporated.**

**BLM Comment 24:**

*(Section 1.3, Page 1-4)*

*2nd paragraph, line 4: Section 1.2 uses “FERC” (vs. “Commission”) ... be consistent in whatever this agency is called – “FERC” or “Commission”.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 25:**

*(Section 1.4, Page 1-4)*

*1st paragraph, line 1: Replace “Scoping Document” with “SD” (acronym has already been defined).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 26:**

*(Section 1.5)*

*Identified Issues. Cedar Valley pipeline (CVP) is no longer involved.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 1:**

*(Section 1.2)*

*The UBWR describes the project area as including lands administered by various federal and state agencies, but does not include tribal lands administered by the Kaibab Tribe and the Bureau of Indian Affairs ("BIA"), for the Department of the Interior ("Department"). PLP at 1- 1. The Existing Highway and Southeast Corner Alternatives would each cross Kaibab lands, so the PLP must mention this fact, and must include the BIA among the federal administrative agencies.*

*The UBWR states that the PLP "incorporates input from . . .Native American Tribes . . . acquired as part of extensive consultation activities completed during the pre-filing licensing and permitting activity phases for the LPP Project,"id. at 1-3, but the UBWR does not*

*describe any consultations or provide information on how it considered the input it received from the Kaibab Tribe to address its concerns. As described above, and in the comments below on the individual revised draft study reports, the UBWR does not meaningfully consider the Kaibab Tribe's significant concerns and the recent revisions to the draft study reports are inadequate. Although the UBWR claims it incorporated and addressed the concerns that the Kaibab Tribe repeatedly expressed during consultations and in its prior comments, the PLP and revised draft study reports do not support the UBWR's claim. The Tribe's concerns remain unaddressed.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Ongoing discussions between UDWRe and the Kaibab Tribe as well as the tribe's previous comments have used to prepare final study reports and Exhibit E.**

**Lisa Rutherford and Paul Van Dam Comment 1:**

***Chapter 1 – Introduction***

***1.2 Preliminary Licensing Proposal Purposes (Page 1-3)***

*The following summarizes the LPP Project facilities and features proposed by UBWR:*

- *Water Intake System*
  - *Intake tunnels, shafts and forebay chamber*
  - *Intake pump station*
  - *Intake substation*
- *Water Conveyance System*
  - *Water conveyance pipeline*
  - *Four booster pump stations*
  - *Regulating tank*
  - *Kane County Water Conservancy District pipeline*
- *Hydro System*
  - *Hydroelectric penstocks*
  - *Four in-line hydroelectric generating stations*
  - *Pumped storage forebay reservoir*
  - *High-pressure water shaft and surge shaft*
  - *High-pressure penstock*
  - *Hurricane Cliffs Pumped Storage Hydroelectric Generating Station*
  - *Pumped storage afterbay reservoir*
  - *Water tunnel and penstock*
  - *Terminal hydroelectric generating station*
- *Electric Power Transmission System*
  - *Overhead transmission lines*
  - *Primary and secondary electrical substations*
  - *Switching stations*
  - *Communications facilities (SCADA)*

***COMMENT***

*The information provided by Applicant clearly indicates that the “pumped storage” (PSP) component of the Lake Powell Pipeline Project (LPPP) is included. Yet, during discussions about the LPP and in information provided during meetings and information provided to the*

public about LPP, there is little information pertaining to the PSP features and cost. The Washington County Water Conservancy District (WCWCD) continues to assert the project will cost in the \$1 billion range when the Draft Study Report 10 on Socioeconomic-Water Resource Economics clearly shows higher cost with this feature. When asked at an October 2015 LPP management meeting in Kanab, Utah, WCWCD manager Ron Thompson said that basically there is no business plan at this point and had no other details to share. Is this feature being included only to make this a project that would fall under FERC's licensing authority? It would seem so, since it only gets attention during licensing activities. With the Utah legislature disputing over paying for the project even without the additional PSP costs, FERC should put additional scrutiny on this to determine if it really is part of the project.

From page ES-2 of 2015 Draft Study Report 10 Socioeconomic-Water Resource Economics: An initial set of analyses have taken into account relying on the natural gas generation alternative for pipeline water pumping (see Tables 5-3 and 5-4). The pumped storage LPP Project with natural gas generation pumping would have benefits of about \$2.9 billion, with cost at about \$2.6 billion (4.14% discount rate); or benefits at about \$4.3 billion, with costs at about \$3.2 billion (3.0% discount rate). This yields B/C ratios of 1.12 and 1.33, respectively.

Applicant must provide more detail to back up these cost/benefit calculations for the PSP. As a tax payer of Utah and Washington County, the only thing that would be a “certainty” to me is the cost incurred as a result of this project. The “benefits” used to calculate a B/C are not “givens” and, in fact, B/Cs are often fraught with problems due to double dipping on certain benefits.

**UDWRe Response:** (WCWCD, with input from UDWRe)

**Your comment has been noted.**

## **Chapter 2 Comments:**

### **Reclamation Comment 6:**

(Section 2.1, Page 2-1)

*The Department of the Interior (DOI) cooperating agencies each have a specific purpose of action regarding the proposed LPP. Reclamation's purpose of action is: (1) whether to approve a water service contract for water diversion from Lake Powell; and (2) whether to approve a ROW license agreement for constructing and operating the pipeline and other LPP facilities within the Reclamation Primary Jurisdiction Area near Glen Canyon Dam.*

*Add/replace underlined text:*

*The Department of the Interior (DOI) cooperating agencies each have a specific purpose of action regarding the proposed LPP. Reclamation's purpose of action is: (1) whether to approve a water service contract for water stored in Flaming Gorge, delivered down the Green River providing in-stream benefits, and diverted from Lake Powell into the pipeline; and (2) whether to*

*approve a ROW license agreement for constructing and operating the pipeline and other LPP facilities within the Reclamation Primary Jurisdiction Area near Glen Canyon Dam.*

*Note: Since the Lake Powell Pipeline diversions are anticipated to occur under a water right that was segregated from the Flaming Gorge Storage water right (Water Right No. 41-2973), it is crucial to both Utah and Reclamation that this pipeline water originates in and is contracted from Flaming Gorge Reservoir. Consequently, it is important that the EIS describes it as water first stored in Flaming Gorge Reservoir by Reclamation and then released down the Green River to be diverted from Lake Powell. Reclamation does not need to modify the current stored water releases from Flaming Gorge Dam to convey the necessary water to Lake Powell to satisfy this contract. Since these releases occur under the 2006 ROD, Reclamation has already analyzed the effects of these releases from Flaming Gorge Reservoir and through the Green River to Lake Powell in the 2005 Flaming Gorge EIS.*

**UDWRe Response:**

**The suggested language has been inserted to replace the current language.**

**Reclamation Comment 7:**

*(Table 2-1, Page 2-5)*

*Agency = Bureau of Reclamation - Permit/License/Approval/Review Column: Add Clean Water Act Compliance*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**Reclamation Comment 8:**

*(Section 2.3.2, Page 2-7)*

*Section 404 and 402 of the Clean Water Act should also be mentioned in subheadings as these sections govern the Stream Alteration Permits and National Pollutant Discharge Elimination System (NPDES) permits that will likely need to be acquired for the project.*

**UDWRe Response:**

**Sections 402 and 404 are not required under the Federal Power Act and are referred to under the responsible regulatory agencies in Table 2-1.**

**BLM Comment 27:**

*(General)*

*Please always refer to TWO participating water conservancy districts...since Iron County dropped out some time ago.*

**UDWRe Response:**



The text has been revised to address the comment.

**BLM Comment 28:**

*(Section 2.1)*

*Planned and Potential Future Work – need to include supply projects in this NEPA document, but indicate if they have “independent utility” if the LPP were not to be built.*

**UDWRe Response:**

Planned and potential future work is discussed in Final Study Report 19 - Water Needs Assessment. Reuse of water from the proposed action would not be possible without the action and therefore does not have independent utility. Reuse of local water resources will occur with or without the proposed action and thus has independent utility. All other planned and potential future work is unconnected to the proposed action and has independent utility. Reports will be updated as necessary to clarify the independent utility of planned WCWCD and KCWCD water supply projects.

**BLM Comment 29:**

*(Section 2.1, Page 2-1)*

*First paragraph, third sentence. the “phrase developing a waterway” What is meant by a waterway? Would “pipeline” be a better word choice and more explicit?*

**UDWRe Response:**

“Waterway” is a generic term for a means to convey water. Since LPP Project water would pass through pipelines, penstocks, tunnels, and surface water impoundments, UDWRe’s view is that the text is appropriate as written.

**BLM Comment 30:**

*(Section 2.1, Page 2-1)*

*Fourth paragraph, first sentence. Change “Some of the project-specific issues addressed in this PLP are focused on the following proposed measures:...” Change to “Some of the project-specific measures addressed in this PLP are focused on the following resource issues:...”*

**UDWRe Response:**

The text has been revised to read, “Some of the project-specific elements addressed in this Exhibit E are focused on the following resource issues: ...”

**BLM Comment 31:**

*(Section 2.1, Page 2-1)*

*The Department of the Interior (DOI) cooperating agencies each have a specific purpose of action regarding the proposed LPP Project. Reclamation’s purpose of action is: (1) whether to approve a water service contract for water diversion from Lake Powell; and (2) whether to approve a ROW license agreement for constructing and operating the pipeline and other LPP Project facilities within the Reclamation primary jurisdiction area near Glen Canyon Dam. The*

*NPS purpose of action is whether to approve a ROW grant for constructing and operating the pipeline and other LPP Project facilities on federal land administered by the NPS. The BLM purpose of action is whether to approve a ROW grant for constructing and operating the pipeline and other LPP Project facilities on federal land administered by the BLM. Are these DOI agencies truly a “cooperating agency” Is there a signed Cooperating Agency MOU?*

**UDWRe Response:**

**A Cooperating Agency MOU has been on file since March of 2009.**

**BLM Comment 32:**

*(Section 2.1 Page 2-2)*

*1. To deliver 86,249 acre-feet of the UBWR’s Colorado River water rights on an annual basis from Lake Powell to Washington County (82,249 acre-feet) and Kane County (6,000 acre-feet of diversion or 4,000 acre-feet of depletion) to meet future municipal and industrial (M&I) water demands in southwest Utah. 2. To develop hydropower generating works and incidental electrical facilities along the Lake Powell Pipeline to sell the electric energy not needed for project operation to public utilities.*

*Purpose*

*Including the Agencies “Purpose”*

**UDWRe Response:**

**The “purpose” of each of the various agencies is stated in the fifth paragraph of Section 2.1.**

**BLM Comment 33:**

*(Section 2.2, Page 2-2)*

*Item #2. “To develop hydropower generating works and incidental electrical facilities along the Lake Powell Pipeline to sell the electric energy not needed for project operation to public utilities.”*

*Please verify the accuracy of the statement above indicating that that this project would generate excess electric energy.*

**UDWRe Response:**

**The project hydroelectric generation facilities would generate energy in excess of that required to operate the hydroelectric generation facilities. Such excess energy would be supplied to the electrical grid.**

**BLM Comment 34:**

*(Section 2.2, Page 2-2)*

*First paragraph, last sentence. “The UBWR would deliver wholesale electricity to regional transmission operators for use in the grid using power produced from the LPP Project.” Please verify the accuracy of the statement above indicating that that this project would generate excess electric energy.*

**UDWRe Response:**

**Refer to the response to BLM Comment 33.**

**BLM Comment 35:**

*(Section 2.2, Page 2-2)*

*Second paragraph, last sentence. Change "...district's service areas." to "...districts' service areas"*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 36:**

*(Section 2.2, Page 2-2)*

*Hydroelectric power from the LPP would be produced at six project powerhouses with a combined total installed capacity of 307.7 megawatts (MW). The LPP would produce an annual average of 146.21 gigawatt-hours (GWh) at the design conveyance of 86,249 acre-feet per year. The total annual flow through the LPP would gradually increase to the design flow rate as the M&I water demand increases with increasing population in the southwest Utah water conservancy district's service areas. UBWR's power output would be sold to PacifiCorp, Deseret Generation and Transmission Cooperative, Utah Associated Municipal Power Systems (UAMPS), Garkane Energy Cooperative, Dixie Power, Western Area Power Administration and Washington County municipal power systems interconnected through existing electric transmission systems. All generated electricity would be delivered to existing transmission systems at LPP Project switchyards and substations located at nearby powerhouses. UBWR would negotiate power purchase contracts with each power company. Energy from the LPP Project would be used to meet the region's growing energy demand and renewable energy goals. The energy would be used in the Northwest Power Pool of the Western Electricity Coordinating Council (WECC). The Northwest Power Pool covers the states of Utah, northern Nevada, Oregon, Washington, Idaho, most of Montana and Wyoming. The Basin subregion encompasses Utah, Idaho and northern Nevada. The Basin subregion experiences summer peaking demands that are primarily dependent on coal-fired, gas-fired, and hydroelectric generation. Coal-fired, gas-fired and hydroelectric generation is forecast to increase during the period from 2020 through 2060. Forecasts of WECC peak demand and annual energy generation capacity are projected to grow at an approximate annual rate of 2.6 percent during the forty-year period from 2020 to 2060. Peak summer load within the WECC area is projected to increase from 170 gigawatts (GW) in 2020 to 347 GW in 2060. Hydroelectric generation is projected to comprise approximately 78 percent of renewable energy resources in the WECC area from 2020 through 2060, growing by 11.8 GW in generation capacity (Argonne National Laboratory 2008). Operation of the LPP would provide hydroelectric generation to meet part of the regional power demand. The LPP would have a total installed capacity of 307.7 MW and would produce an annual average of 146.21 GWh. Fifty-six percent of the LPP power generation would involve pumped storage used to help meet summer peaking demands during afternoon and early evening hours. Power generated by the LPP would be used to help maintain reliable operations of the transmission grid by fine-tuning the flow of electricity in the grid to balance supply and demand.*

*The LPP Project will meet the following UBWR needs:*

1. *To develop a water resource to meet the demands for existing and projected population beyond the existing water resources supplying Kane and Washington counties.*
2. *To maximize use of existing available and identified municipal and industrial (M&I) water supplies in Kane and Washington counties to meet current and future population demands.*
3. *To ensure implementation of water conservation, reuse, and recycling measures by project water recipients to meet or exceed the State of Utah's goal of 25 percent reduction in per capita water use by 2025.*
4. *To develop clean, renewable energy sources wherever possible.*

*The DOI agencies each have a specific need for federal action associated with the proposed LPP. The BLM's need for federal action arises from its responsibility under the Federal Land Policy and Management Act of 1976, as amended (FLPMA) and other legislation to respond to the UBWR's ROW request. The BLM's multiple-use mission includes managing activities on federal land such as ROW authorizations, while conserving natural, historical, cultural, and other resources on public lands in accordance with federal laws and BLM policies, guidance and management plans. The FLPMA gives the Secretary of the Interior general authority to grant ROW across public lands administered by the BLM, including ROW for reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, tunnels and other facilities and systems for the impoundment, storage, transportation or distribution of water (43 USC § 1761). The NPS' need for federal action arises from its responsibility in administering land use authorizations under its Special Use Permit program to respond to the UBWR's ROW request in accordance with federal laws and NPS policies, guidance and the Glen Canyon National Recreation Area management plan. The NPS mission is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. The NPS Special Use Permit program authorizes activities including ROW that provide benefit to specific users and that require formal authorization and provide management conditions in order to protect park resources and the public interest. Reclamation's need for federal action arises from its responsibility under Federal Reclamation Law to respond to UBWR's requests for a long-term water service contract and ROW license agreement. Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. Reclamation operates Glen Canyon Dam and Lake Powell, which would be the source of the LPP Project water under the Colorado River Storage Project Act, the enabling legislation that helps ensure each Western state in the Colorado River basin receives its legal share of Colorado River water.*

Need

Including the Agencies "Need"

#### **UDWRe Response:**

**The "need" of each of the various agencies is stated in the sixth paragraph of Section 2.2.**

#### **BLM Comment 37:**

*(Section 2.2, Page 2-2)*

*Energy from the LPP Project would be used to meet the region's growing energy demand and renewable energy goals. Please define region. The text discussion includes much of the western United States. Please provide documentation that this project will really support the grid system. This statement makes it seem as this is a major Hydroelectric project. This is a water conveyance project.*

**UDWRe Response:**

**While it is true that this project is a water conveyance project, the project includes proposed hydropower facilities. The power generated by the project may support the grid system in several alternative ways. The use of power from the project for project power needs would offset demands on the grid that might otherwise be made by the project. The power generated by the project could be delivered to other power generators or users in the system and offset their demands on the grid. The region that could be affected by these deliveries could extend as far as contract parties' service areas as those contracts may be negotiated after permits for the project are issued. Accordingly, the region may be considered to extend throughout the western United States insofar as the contracted power services for WAPA, Garkane Energy Cooperative, Inc., Page Electric Utility, St. George City, Hurricane City, Dixie Power and Rocky Mountain Power may extend.**

**BLM Comment 38:**

*(Section 2.2, Page 2-2)*

*Fourth paragraph, sixth sentence. "Coal-fired, gas-fired and hydroelectric generation is forecast to increase during the period from 2020 through 2060." This is not accurate...what is the source of this statement? The understanding is that coal-based power generation is on the decline.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 39:**

*(Section 2.2, Page 2-3)*

*Sixth paragraph in Sec. 2.2, second sentence. Change "...and other legislation to respond..." Change to "...and other federal laws to respond..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 40:**

*(Section 2.2, Page 2-3)*

*Sixth paragraph in Sec. 2.2, third sentence. Change "...guidance and management plans." Change to "...guidance and resource management plans."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 41:**

*(Section 2.2, Page 2-3)*

*Sixth paragraph in Sec. 2.2, 4th sentence (occurs in two places) and 7th sentence. Change “ROW” to “ROWS.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 42:**

*(Section 2.2, Page 2-3)*

*Sixth paragraph in Sec. 2.2, last sentence. “Reclamation operates Glen Canyon Dam and Lake Powell Reclamation operates Glen Canyon Dam, but does it really “operate” Lake Powell? Isn’t it at least jointly managed with the National Park Service? Please clarify this.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 43:**

*(Section 2.2, Page 2-3)*

*Item #2. The acronym “M&I” has already been defined in this PLP, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 44:**

*(Section 2.2, Page 2-3)*

*The Need for Action – the text of the section focuses primarily on the hydro-electric need however at the bottom of page 2.3 there are four bullet points; 3 on water demands and the last on hydro opportunities. It appears that the need for the action is not clear in the section. What is the issue to be resolved? To this review it seems that Hydro-power is the need, and water conveyance is the by-product. This is actually the opposite. Since this is primarily a water delivery system, water is the needs and the hydro portion is secondary to getting the water to the delivery point.*

**UDWRe Response:**

**Since the document is part of an application to generate hydroelectric power it was decided to emphasize the hydroelectric power generation components of the project in this section. UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 45:**

*(Section 2.3, Page 2-4)*



**First paragraph, first sentence.** Change “... Clean Water Act (CWA), Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Wild and Scenic Rivers Act (WSRA)...” Change to “... Clean Water Act (CWA), Endangered Species Act (ESA), National Historic Preservation Act (NHPA) as amended, Wild and Scenic Rivers Act (WSRA)...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 46:**

*(Section 2.3, Page 2-4)*

**First paragraph, second sentence.** “... Coastal Zone Management Act (CZMA)...” Is this acronym used elsewhere? If not, delete acronym.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 47:**

*(Section 2.3, Page 2-4)*

**First paragraph, fourth sentence.** Change “will” to “would”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 48:**

*(Section 2.3, Page 2-4)*

**Table 2-1, second row, second column.** After “Right-of-Way Grant” add the acronym “(FLPMA).”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 49:**

*(Section 2.3, Page 2-5)*

**Table 2-1, fourth row on page:** Is the U.S. Fish and Wildlife Service a cooperating agency? If so, add this to Column 2.

**UDWRe Response:**

**The U.S. Fish and Wildlife Service is not a cooperating agency.**

**BLM Comment 50:**

(Section 2.3, Page 2-6)

**Table 2-1, sixth row on page, second column:** Define the acronym “(AZPDES).”

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 51:**

(Section 2.3, Page 2-6)

**Table 2-1, third row on page, second column:** Define the acronym “(UPDES).”

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 52:**

(Section 2.3.1, Page 2-7)

**First line:** The acronym “FPA” has already been defined in this PLP, so don’t do so again here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 53:**

(Section 2.3.1, Page 2-7)

**Second line:** This PLP alternates between using the term “Commission” and “FERC”. Please be consistent on which term is used (use one or the other, but not both.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 54:**

(Section 2.3.1.1, Page 2-7)

**Second and third lines:** This PLP alternates between using the term “Commission” and “FERC”. Please be consistent on which term is used (use one or the other, but not both.

**Eighth line:** Pages A and A-2 of this PLP defines this acronym as “Rural Electric Association,” not as “Ready for Environmental Analysis.” Thus, please delete use of the “REA” acronym here.

**Last sentence.** Please delete “BLM” before “Kanab Field Office,” “Grand Staircase-Escalante National Monument,” and “St. George Field Office.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 55:**

(Section 2.3.1.2, Page 2-7)

**6th line:** Pages A and A-2 of this PLP defines this acronym as “Rural Electric Association,” not as “Ready for Environmental Analysis.” Thus, please delete use of the “REA” acronym here.

**First paragraph, last two sentences:** Change “...including the US Fish and Wildlife Service, Utah Division of Wildlife Resources, and Arizona Department of Fish and Game. The draft environmental analysis (Chapter 5) of this PLP documents the analysis of potential effects on fish and wildlife resources.” to “...including the US Fish and Wildlife Service (USFWS), Utah Division of Wildlife Resources (UDWLR), and Arizona Game and Fish Department (AGFD). The draft environmental analysis (Chapter 5) of this PLP documents the analysis of potential effects on fish and wildlife resources, including special status species.”

**UDWRe Response:**

**The correct acronym for Utah Division of Wildlife Resources is UDWR. This has been corrected throughout the text. The suggested edits have been incorporated.**

**BLM Comment 56:**

(Section 2.3.2, Page 2-7)

**First line:** The acronym “CWA” has already been defined in this PLP, so don’t do so again here.

- **Fifth line:** Insert “(EPA)” after “United States Environmental Protection Agency”.
- **Sixth line:** Insert “(ADEQ)” after “Arizona Department of Environmental Quality”.
- **Seventh line:** Replace “United States Environmental Protection Agency” with the acronym “EPA”.
- **Eleventh line:** Pages A and A-2 of this PLP defines this acronym as “Rural Electric Association,” not as “Ready for Environmental Analysis.” Thus, please delete use of the “REA” acronym here.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 57:**

(Section 2.3.3, Page 2-8)

**First paragraph:**

- **First line:** The acronym “CWA” has already been defined, so don’t do so again here.
- **Second line:** Rewrite end of sentence to read “... existence of endangered, threatened, or candidate species”.
- **Sixth and Seventh lines:** The acronym “USFWS” has already been defined, so don’t do so again here.
- **Ninth line:** The acronym “BA” has already been defined, so don’t do so again here.
- **Tenth line:** Acronym should be “USFWS” (not “FWS”). Please change this.
- **Last line:** Please define the acronym “IPaC”.

***Second paragraph:***

- ***First sentence:*** Middle of sentence should read "... and terrestrial resources (including threatened, endangered and candidate species and designated critical habitats)..."
- ***Second sentence:*** Beginning of sentence – the acronym "PM&E" has already been defined, so don't do so again here.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 58:**

*(Section 2.3.4, Page 2-8)*

***First paragraph, first sentence:*** The acronym "NHPA" has already been defined in this PLP, so don't do so again here.

***Third paragraph, 6th and 8th lines:*** Change "Native American tribes" to "American Indian tribes".

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 59:**

*(Section 2.3.4, Page 2-9)*

***First paragraph, second sentence.*** "...LPP Project license addresses and treats all historic properties..." This thought seems incomplete..."treats" how?

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 60:**

*(Section 2.3.5, Page 2-9)*

***First paragraph, first line:*** The acronym "WSRA" has already been defined in this PLP, so don't do so again here.

***Second paragraph, second sentence.*** Change "has" to "have."

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 61:**

*(Section 2.3.5, Page 2-9)*

*Text is a mix of terms. Please include legal terminology from WSR ACT and BLM legal guidance. Text edits in track changes included.*

### **2.3.5 Wild and Scenic Rivers Act**

*Segments of the Paria River and Buckskin Gulch have been identified and recommended suitable for inclusion in the National Wild and Scenic River (NWSR) system. The Paria River is also listed in the Nationwide Rivers Inventory requiring federal agencies involved with water resource projects to consult with affected land management agencies to avoid or mitigate any possible effects. Section 7(a) of the Wild and Scenic Rivers Act (WSRA) requires federal agencies to make a determination as to whether a project will threaten suitability or tentative classification or would diminish any outstanding remarkable values (ORV) such as those related to geologic, historical, scenic, recreational, or riparian documented and identified as present in a river corridor designated, eligible or suitable for inclusion as a Wild and Scenic River (WSR).*

#### **2.3.5.1 Upper Paria River – 2 Segment...**

*Under the WSRA, an eligibility determination nor eventual designation neither gives nor implies government control of private lands within the river corridor. Although Congress (or the Secretary of the Interior upon request of the Governor for WSRA 2(a)(ii) rivers) could include private lands within the boundaries of the designated river area, federal WSR management restrictions would not apply.*

#### **2.3.5.2 Lower Paria River – 1 Segment**

*The GSENM Management Plan/EIS (February 2000) identified and recommended the main stem of the Lower Paria River – 1 Segment as 3.3 miles long and suitable for Recreational classification under the WSRA. Section 23, which includes a proposed LPP transmission line crossing of the Paria River.*

#### **2.3.5.3 Buckskin Gulch Segment**

*The GSENM Management Plan/EIS (February 2000) identified and recommended the Buckskin Gulch/Wire Pass segment as 18 miles long and suitable for Wild classification under the WSRA in the reach within the Paria Canyon-Vermillion Cliffs Wilderness beginning at T43S, R2W, Section 15 to the confluence with the Paria River.*

### **UDWRe Response:**

**The text has been revised to address the comment.**

### **BLM Comment 62:**

*(Section 2.3.5.1, Page 2-9)*

**3rd line:** Change "...T42S, R1W, Section 28..." to "...T. 42 S., R. 1 W., Section 28..."

**Last sentence:** Revise middle of sentence to read "... suitable for designation but would not be affected by designation or subject to GSENM management restrictions as a WSR (BLM 2000)."

*Note: Citations have no comma between the author name and the document date.*

### **UDWRe Response:**

**The suggested edits have been incorporated.**

### **BLM Comment 63:**

*(Section 2.3.5.2, Page 2-9)*

**3rd and 4th lines:** Change "...Highway 89 in T43S, R1W, Section 10 and continues to the Paria Canyon-Vermillion Cliffs Wilderness boundary in T43S, R1W, Section 23..." to "...Highway 89 in T. 43 S., R. 1 W., Section 10 and continues to the Paria Canyon-**Vermilion** Cliffs Wilderness boundary in T.43 S., R. 1 W., Section 23..." Note: "Vermilion" only has one "l"

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 64:**

(Section 2.3.5.2, Page 2-10)

**10th line on page:** Change "...river area suitable..." to "...river segment suitable..."

**Last line in section:** Remove comma from the "(BLM 2000)" citation.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 65:**

(Section 2.3.5.3, Page 2-10)

**First sentence:** Change "...Paria Canyon-Vermillion Cliffs Wilderness beginning at T43S, R2W, Section 15." to "...Paria Canyon-Vermilion Cliffs Wilderness beginning at T. 43 S., R. 2 W., Section 15." (Again, only one "L" in "Vermilion".)

**Second sentence:** Change "...T42S, R3W, Section 26..." to "...T. 42 S., R. 3 W., Section 26..."

**Last sentence in section:** Change "...river area suitable..." to "...river segment suitable..."

**Last line in section:** Remove comma from the "(BLM 2000)" citation.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 66:**

(Section 2.3.6, Page 2-10)

**Line 4:** Should read "...designated wilderness or within a wilderness study area. The LPP Project". (Unless using a proper name, "wilderness" and "wilderness study area" should not be capitalized.)

**Line 5:** End of line should read "... two designated wilderness areas".

**Line 6:** Beginning of line should read "three wilderness study areas."

**Line 7:** Should be "... the Cottonwood Point Wilderness in its alignment ..."

**Line 9:** Should be "... the Paria Canyon-Vermilion Cliffs Wilderness, parallel to ..." (delete "Area", and spell "Vermilion" with only one "L").

**Line 12:** The word "the" before "Cockscomb" should not be capitalized.

**Last line:** Does Chapter 5 also include an analysis of potential effects on designated wilderness (which is different than WSAs)?

**UDWRe Response:**



**The suggested edits have been incorporated.**

**BLM Comment 67:**

*(Section 2.3.6, Page 2-10)*

*This section leaves out the discussion of impacts of construction and pump stations in proximity to the Cockscomb WSA as well as Wahweap WSA.*

**2.3.6 Wilderness Act**

*Section 4(c) of the Wilderness Act, 16 U.S.C. § 1133(c), states that there shall be no commercial enterprise and no permanent road within any wilderness area designated by the Act and no structure or installation within any such area. In addition, BLM Wilderness Study Areas are Congressionally mandated to be managed “so as not to impair suitability of such areas for preservation as wilderness”.*

*The proposed LPP project water conveyance system and paralleling US Highway 89 and would be aligned within two miles of the Wahweap Wilderness Study Area, within 500 feet of the Cockscomb Wilderness Study Area, and within one mile of the Paria-Hackberry Wilderness Study Area. One proposed project pump station location lies within ¼ mile of the Cockscomb WSA boundary. A second proposed project pump station lies within ¼ miles of the Wahweap Wilderness Study Area boundary.*

**UDWRe Response:**

**No construction is proposed to be undertaken in these areas and there will be no direct or indirect impacts on AQ, Noise, and other resources which will return to baseline conditions outside of the WSAs.**

**BLM Comment 68:**

*(Section 2.3.6, Page 2-10)*

*Wilderness areas and WSA should be separated as they have separate authorizing legislation and guidance. It was not apparent until chapter 5 that they are lumped. In such a large document this needs to be disclosed up front.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 69:**

*(Section 2.3.6, Page 2-10)*

*“...within one mile of The Cockscomb Wilderness Study Area ...” On the north side of the road, in the Paria River area, the WSA boundary is within 1/10th (587 feet) of a mile from the highway. Very little margin for error as compared to “within one mile.” Concern that there would be errors on distance in construction / implementation when generalized.*

**UDWRe Response:**

**Your comment has been noted. None of the LPP Project facilities would be located in a WA or WSA.**

**NPS Comment 1:**

*(Section 2.2, Page 2-3)*

**Second paragraph:** *Rights-of-way are issued through the use of a right-of-way permit, not a special use permit. Consider changing the references of "Special Use Permit program" to "Special Park Uses program". Issuance of ROW permits is considered as part of the Special Park Uses program, but the use is authorized through a ROW permit, not a special use permit. See recommended edits below:*

*"The NPS' need for federal action arises from its responsibility to issue an ROW permit to the Utah Board of Water Resources ROW permit request in accordance with federal laws (list laws, 36 CFR §14.1-14.96, GLCA enabling legislation) and NPS policies (Director's Order 53, NPS Management Policies 8.6), guidance and the GLCA General Management Plan. The NPS Special Use Permit Special Park Uses program authorizes activities including the issuance of ROW permits that provide benefit to specific users and that require written authorization and some degree of management control in order to protect park resources and the public interest."*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 2:**

*(Section 2.2, Page 2-3)*

**First paragraph:** *Additional laws to be listed include or may include: Clean Air Act, Native American Graves Protection and Repatriation Act, National Environmental Policy Act, Archaeological Resources Protection Act (ARPA).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 3:**

*(Table 2-1, Page 2-5)*

**National Park Service Area of Table:**

- *Under "Permit/License/Approval/Review", change "Right-of-Way Grant" to "Right-of-Way Permit". Process note: if the pipeline is crossing state roads within the GLCA boundary, the permits will need to show co-location with the applicable state department of transportation.*
- *Under "Permit/License/Approval/Review", the NPS requests additional information on Cultural Resource Use Permit.*
- *The NPS would require using permits such as the "ARPA Permit and Scientific Research Permit"?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 4:**

*(Section 2.3.1.2, Page 2-7)*

*Experimental 10(j) populations include plants as well as animals.*

**UDWRe Response:**

**UDWRe's view is that the reviewer is incorrect.**

**Kaibab Tribe Comment 1:**

*(Section 2.1)*

*The UBWR describes the purpose of action for itself and the Department cooperating agencies, id. at 2-1 to -2, but does not describe the purpose of action for the Kaibab Tribe, which also obtained cooperating agency status. See generally Memorandum of Understanding between the Federal Energy Regulatory Commission and the Kaibab Band of Paillte Indians of Arizona (filed Jan.7, 2009). The UBWR must consult with the Kaibab Tribe on this matter, and the final PLP must accurately describe the Kaibab Tribe's purpose of action.*

**UDWRe Response:**

**The MOU does not describe a purpose of action for the Kaibab Tribe.**

**Kaibab Tribe Comment 2:**

*(Section 2.3)*

*The UBWR states that the original license for the pipeline project must satisfy all applicable federal and state laws, and it lists the major regulatory and statutory requirements. Id. at 2-4 to -10 & tbl. 2-1. The UBWR does not list the Commission's "Policy Statement on consultation with Indian Tribes in Commission proceedings," 18 C.F.R. § 2.1c, or other sources of law requiring tribal consultation and consideration of tribal concerns in this matter. E.g., Presidential Memorandum on Tribal Consultation, 74 Fed. Reg. 57,881 (Nov. 5, 2009); Exec. Order No. 13,175, 65 Fed. Reg. 67,249 (Nov. 6, 2000) ("Consultation and Coordination with Indian Tribal Governments"); Secretarial Order No. 3206 (June 5, 1997) ("American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act"). The UBWR must include these major sources of law regarding tribal consultation in the PLP and strictly comply with their terms.*

**UDWRe Response:**

**Your comment has been noted.**

**LPP Coalition Comment 1: The PLP Section 2.3.1 Economic Analysis**

*(Section 2.3.1)*

*The PLP states:*

*“It is an annualized analysis of the costs and revenues to the licensee under the existing license and the proposed new license. This section estimates costs for: any construction, operation and maintenance of the project facilities; property and income taxes; each proposed environmental measure; and any such measure proposed by a participant and rejected by the licensee. Costs include: out-of-pocket payments, as well as foregone revenues associated with alternative flow schedules and other operational restrictions. Revenues include: proceeds from sale of capacity and generation in the electricity markets, as well as miscellaneous revenues associated with recreational and other uses of project facilities.”<sup>9</sup>*

*The PLP does not include the actual analysis of costs and revenues referenced above and are incomplete. This data should be available to Commission Staff and stakeholders so they independently can verify the analysis.*

*In addition, UBWR has not demonstrated it has the funding necessary to build the pump storage project. Despite this, it is used in the benefit/cost analysis of the Project to show more benefit than cost. We explain how the PLP does not include complete information on the Project in our comments in Study Report No.10 below.*

*Most importantly, the PLP was released Dec.1, 2015 for public comment. Then UBWR submitted a letter to FERC Dec. 18, 2015 which changed the cost of the Project. The pump storage project’s cost decreased significantly from a range of \$2.6 billion-\$3.2 billion to \$1.5 billion-\$1.8 billion. Therefore, the lower cost estimate makes the economic analysis in Study Report No.10 erroneous. In addition, the costs of the project have not been released yet which makes a creditable cost/benefit analysis impossible.*

<sup>9</sup> Content requirements for Exhibit E of the license application (18 C.F.R. § 5.18[b]) (emphasis added)

**UDWRe Response:**

**The projected costs and revenues for the project have been updated in Final Study Report 10 – Socioeconomics and Water Resource Economics.**

**Lisa Rutherford and Paul Van Dam Comment 2:**

*Chapter 2 - Purpose of Action, Need for Action and Statutory and Regulatory Requirements*

***Ch 2 – Purpose of Action (Page 2-1)***

*Issuing a FERC license for the LPP Project would enable the UBWR to generate electricity in project facilities to help offset electrical power consumed in pumping the water from Lake Powell to St. George, Utah. UBWR would generate hydroelectric energy at multiple points along the Hydro System for the term of the license, making electric power available to electric utilities.*

***COMMENT***

*What amount of power would not be available to electric utilities without the PSP? If the PSP is integral to the FERC licensing, Applicant should be required to show it will be included and not just used to sell the project to FERC.*

**UDWRe Response:**

**This comment is addressed in Exhibits A, B, D, and E of the License Application to FERC.**

**Lisa Rutherford and Paul Van Dam Comment 3:**

*(Page 2-1) The UBWR's purposes for the LPP Project are:*

- 2. To develop hydropower generating works and incidental electrical facilities along the Lake Powell Pipeline to sell the electric energy not needed for project operation to public utilities.*

**COMMENT**

*If FERC approves the project with the PSP feature and that portion of the project is never completed, given the funding challenges facing the project in Utah's legislature, what effect does that have on the LPP approval? WCWCD's manager Ron Thompson said he didn't have a firm business plan for PSP at the October 2015 LPP management meeting in Kanab, Utah. Applicant should be required to have definite plans and agreements in place before being approved by FERC.*

**UDWR Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 4:**

*(Page 2-2) Hydroelectric power from the LPP would be produced at six project powerhouses with a combined total installed capacity of 307.7 megawatts (MW). The LPP would produce an annual average of 146.21 gigawatt-hours (GWh) at the design conveyance of 86,249 acre-feet per year. The total annual flow through the LPP would gradually increase to the design flow rate as the M&I water demand increases with increasing population in the southwest Utah water conservancy district's service areas.*

**COMMENT**

*Given the slower growth rate in Washington County – down from 8% and above to 2.9% currently – and the lack of need for LPP water currently, the design flow rate may not be attained for many years, even decades. With FERC's approval being based on energy and that energy production based on flow rate, why can't approval of this project be delayed until need is shown for the water?*

**UDWR Response:**

**UDWR's view is that that a sufficient need for water (and the project) has been demonstrated.**

**Lisa Rutherford and Paul Van Dam Comment 5:**

*(Page 2-2) UBWR's power output would be sold to PacifiCorp, Deseret Generation and Transmission Cooperative, Utah Associated Municipal Power Systems (UAMPS), Garkane Energy Cooperative, Dixie Power, Western Area Power Administration and Washington County municipal power systems interconnected through existing electric transmission systems. All generated electricity would be delivered to existing transmission systems at LPP Project switchyards and substations located at nearby powerhouses. UBWR would negotiate power purchase contracts with each power company.*

**COMMENT**

*Power purchasing entities would not receive much “hydroelectric” power if the 86,249 afy is not realized for quite some time – perhaps decades. The companies listed above are not firm since it was admitted by WCWCD’s manager at the October 2015 LPP management meeting that no plan is in place.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 6:**

*(Page 2-3) Operation of the LPP would provide hydroelectric generation to meet part of the regional power demand. The LPP would have a total installed capacity of 307.7 MW and would produce an annual average of 146.21 GWh. Fifty-six percent of the LPP power generation would involve pumped storage used to help meet summer peaking demands during afternoon and early evening hours. Power generated by the LPP would be used to help maintain reliable operations of the transmission grid by fine-tuning the flow of electricity in the grid to balance supply and demand.*

**COMMENT**

*How much power would be produced during the time period when the LPP is not carrying the total 86,249 afy? PSP feature of the project gets little attention by way of funding or discussion, but Applicant asserts that it would produce 56% of the LPP power generation. If the PSP component is not constructed and 56% of the LPP power generated relies on PSP, then Applicant should be required to provide details to assure FERC that PSP is actually planned or FERC should reject approving this project.*

**UDWRe Response:**

**Your comment has been noted.**

## **Chapter 3 Comments:**

**Reclamation Comment 9:**

*(Section 3.1.1.1.1, Page 3-1)*

*The PLP states that: Fish screens would be mounted on the end of each tunnel where it connects with Lake Powell (Figure 3-3).*

*There is no reference in the PLP addressing the need for a 404 permit for the installation of 6 fish screens below the ordinary high water mark of Lake Powell. This should be addressed somewhere.*

**UDWRe Response:**



Text has been added in Chapter 2 of Exhibit E regarding the requirement for a USACE Section 404 permit to install the fish screens in Lake Powell.

**Reclamation Comment 10:**

*(Section 3.1.3, Page 3-78)*

*PME is used as the acronym. The acronym used in chapter 1 and defined in the text is PM&E (Page 1-3).*

**UDWRe Response:**

The text has been revised to address the comment.

**Reclamation Comment 11:**

*(Section 3.1.3.1.2, Page 3-79)*

*The PLP states that: In accordance with Clean Water Act permitting requirements, Best Management Practices (BMPs) would...*

*BMP's are discussed heavily when referring to stream crossings but Stream Alteration Permits are not mentioned specifically. It may be a good idea to make mention of Stream Alteration Permits in conjunction with BMP's.*

**UDWRe Response:**

The text has been revised to address the comment.

**Reclamation Comment 12:**

*(Section 3.1.3.2.6.13, Page 3-99)*

*The PLP states that: Dewatering is not anticipated to be required for project construction on BLM- or NPS-administered land.*

*This statement seems inconsistent with the rest of the PLP as dewatering is discussed during the construction of the intake tunnels on Reclamation lands, at all tributary crossings, and a possible cofferdam/dewatering at Sand Hollow Reservoir.*

**UDWRe Response:**

**Note that the intake facility is on Reclamation-administered land and Sand Hollow reservoir is on private land. Dewatering is anticipated to not be required at the vast majority of the stream crossings due to their ephemeral nature. Nonetheless, the text has been revised to address the comment.**

**BLM Comment 70:**

*(General)*

*Overall, the entire Alternatives section does not appropriately address impacts on BLM public lands. This major shortfall has been previously discussed with the State, and included major comments on Alternatives Report 22.*

**UDWRe Response:**

**UDWRe’s view is that that the proper content of Chapter 3 of Exhibit E does not include a discussion of the impacts on BLM-Administered lands but rather a description of the Proposed Action and Alternatives considered.**

**BLM Comment 71:**

*(General)*

*Please include a section on valid existing rights that may be impacted by this project. How would project construction ensure that it would not interfere with existing rights-of-ways such as access roads, buried telephone lines and fiber optic cables and overhead power lines?*

**UDWRe Response:**

**UDWRe’s view is that that the proper content of Chapter 3 of Exhibit E does not include a discussion of the impacts on valid existing rights but rather a description of the Proposed Action and Alternatives considered.**

**BLM Comment 72:**

*(Introduction, Page 3-1)*

*Note: Appendix E shows “access road upgrades,” but no description of that included here...please include.*

**UDWRe Response:**

**The text has been revised to include a general description of the access roads within the description of the various project features.**

**BLM Comment 73:**

*(Introduction, Page 3-1)*

*First paragraph, first sentence. The acronym “UBWR” has already been defined in this PLP, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 74:**

*(Section 3.1, Page 3-1)*

*First paragraph, first sentence. The acronym “GSENM” has already been defined in this PLP, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 75:**

*(Section 3.1, Page 3-1)*

*First paragraph, first sentence. Change "... parallels Arizona Route 389..."  
Change to "... parallels Arizona State Route 389..."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 76:**

*(Section 3.1, Page 3-1)*

*First paragraph, first sentence. Change "... Utah-Arizona boundary, and runs northwest..."  
Change to "... Utah-Arizona boundary, and then runs northwest..."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 77:**

*(Section 3.1, Page 3-1)*

*First paragraph, first sentence. Change "...Sand Hollow Reservoir near Hurricane City, Utah."  
Change to "...Sand Hollow Reservoir near Hurricane, Utah."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 78:**

*(Section 3.1, Page 3-1)*

*First paragraph, second sentence. "Proposed electric transmission lines west of the topographical high point would transfer hydroelectric power generated at stations along the penstock alignments to existing transmission lines or planned substations. Proposed electric transmission lines east of the topographical high point..." Where is the referenced topographical high point?*

**UDWRe Response:**

**The text has been revised to read "system high point" which is located at High Point Regulating Tank-2.**

**BLM Comment 79:**

*(Section 3.1, Page 3-1)*

*The LPP Project Proposed Action linear facility alignment generally parallels Highway 89 from the water intake system at Lake Powell to the west boundary of the Grand Staircase-Escalante - LPP would enter the southern boundary of the monument.*

**UDWRe Response:**

**UDWRe's view is that it is correct to state that the LPP Project traverses the southern portion of GSENM. The referenced text is describing where the alignment is generally located in relation to Highway 89 and where it diverges from the Highway 89 alignment. This happens to occur at or near the western boundary of GSENM. No change to the text is needed.**

**BLM Comment 80:**

*(Section 3.1.1.1, Page 3-1)*

**7th line.** *"... Water Intake System site would be surrounded by security fencing..." Describe what kind of security fencing would be used.*

**UDWRe Response:**

**The security fencing is described in Section 3.1.3.2.3.2 of the text.**

**BLM Comment 81:**

*(Section 3.1.1.1, Page 3-1)*

**Fourth sentence.** *Change "...within the Glen Canyon National Recreation Area (GCNRA) boundaries (Figure 3-2)." to "...within the boundary of GCNRA (Figure 3-2)."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 82:**

*(Section 3.1.1.1, Page 3-1)*

**10th line:** *The acronym "ROW" has already been defined in this PLP, so don't do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 83:**

*(Section 3.1.1.1.1, Page 3-1)*

**First sentence on page.** *"The underground features of the Water Intake System would consist of six submerged horizontal intake tunnels, two vertical intake shafts, two forebay connector tunnels, a forebay chamber, six vertical pump well shafts, and one isolation gate shaft." These features are not shown on Fig. 3-3....the figure needs to display all of these. The figure displays only three out of the six submerged horizontal intake tunnels, one of two vertical intake shafts, one of two forebay connector tunnels, and only one of six vertical pump well shafts. The one*

*isolation gate shaft is not shown on the figure at all.*

**UDWRe Response:**

**Figure 3-3 is showing a cross section of the facility. In such a view elements that are either in front of or behind the elements shown would not be visible. This is the case for most of the “missing” elements listed in the comment. Viewing Figure 3-3 in conjunction with Figure 3-4 will assist the reviewer with familiarization with the site.**

**The project design is approximately 10% complete, which is what is called for at this stage. Further details would be provided at the appropriate stage in the application and design processes.**

**BLM Comment 84:**

*(Section 3.1.1.1.1, Page 3-1)*

*First paragraph, third sentence. “The six submerged horizontal intake tunnels include two parallel tunnels at each of three elevations connecting with Lake Powell: 1) upper intake tunnels at elevation 3,575 feet mean sea level (MSL) and 325 feet long; 2) middle intake tunnels at elevation 3,475 feet MSL and 365 feet long; and 3) lower intake tunnels at 3,375 feet MSL and 385 feet long.” Display this (clarify) on Fig. 3-3.*

**UDWRe Response:**

**Refer to the response to BLM Comment 83.**

**BLM Comment 85:**

*(Section 3.1.1.1.1, Page 3-1)*

*Underground Features paragraph. Also need to discuss the potable water well and wastewater storage tank mentioned on p. 3-72.*

**UDWRe Response:**

**Text has been added to address the comment.**

**BLM Comment 86:**

*(Figure 3-1, Page 3-2)*

*Where is the “topographic high point”? Show that on this figure.*

**Legend.** Change “Hydro System – South Alternative” to “Hydro System – Proposed Action”

**Legend.** It is hard to distinguish the National Park/Monument and GSENM-Boundary symbols.

**UDWRe Response:**

**The “topographic high point” text has been revised to “system high point” which is located at High Point Regulating Tank-2.**

The legend has been revised to address the comment.

The drawing has been revised so that the same symbol shows the National Park/Monument and GSENM-Boundary.

**BLM Comment 87:**

*(Section 3.1.1.1.1, Page 3-4)*

**Sixth line:** *Figure 3-3 only shows one vertical intake shaft, not two.*

**Eleventh line:** *Figure 3-3 only shows one forebay connector tunnel, not two.*

**Seventeenth and Eighteenth lines:** *“Where is the “vertical isolation shaft extending from the pump station” displayed on Fig. 3-3?*

**Twenty-third line:** *Figure 3-3 only shows one vertical pump well shaft, not six.*

**Twenty-sixth line:** *Change “...well shafts would be location south of the vertical isolation...” to “...well shafts would be locateded south of the vertical isolation...”*

**UDWRe Response:**

The figure is a cross section so elements either in front of or behind the elements shown would not be visible.

The vertical isolation shaft is shown in plan view in Figure 3-4.

The suggested edit from the fifth paragraph of the above comment has been incorporated.

**BLM Comment 88:**

*(Figure 3-3, Page 3-5)*

*In both places that it shows “Valve or Gate,” add the word “Isolation” in front.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 89:**

*(Section 3.1.1.1.2, Page 3-6)*

**Water Intake Pump Station.** Where is this on Fig. 3-3?

**UDWRe Response:**

Note that Figure 3-3 is meant to show underground features. Nonetheless, the pump station would be located where the “Slurry Separation Plant” and “Microtunnel Control Cabin” are shown in Figure 3-3.

**BLM Comment 90:**



(Section 3.1.1.1.2, Page 3-6)

*First paragraph. None of the following are shown on Figure 3-4: “six 3,000 horsepower vertical turbine pumps,” “horizontal pump discharge piping,” “electrical room,” “mechanical room,” “chemical room,” “bridge crane,” and “office room.” Please add them.*

**UDWRe Response:**

**Note that Figure 3-4 is a site plan. Typically design elements on the interiors of facilities are not shown on site plans. While not labeled, the “six 3,000 horsepower vertical turbine pumps” and “horizontal pump discharge piping” are shown in the Figure. UDWRe’s view is that Figure 3-4 is appropriate as presented.**

**BLM Comment 91:**

(Section 3.1.1.1.2, Page 3-6)

*First paragraph, line 19. Delete “aquatic” (there is no such thing as “non-aquatic mollusks”).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 92:**

(Section 3.1.1.1.2, Page 3-8)

*Discuss shortfalls of adequacy of water supply for both Kane and Washington Counties. Needs to discuss any benefits. (e.g., fish, wildlife, etc.)*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 93:**

(Section 3.1.1.1.2, Page 3-8)

*8th line on page: Insert “as described in Sec. 3.1.3.2.3 of this PLP” after “surrounded by security fencing”.*

*Last sentence in this section: Add the following text to the end of this sentence – “All facilities would utilize architectural details and be painted or constructed of colored materials to blend with the colors of the surrounding landscape.”*

**UDWRe Response:**

**The suggested edit to the 8th line has been incorporated.**

**The suggested edit to the last sentence will be considered to the extent it is called for.**

**BLM Comment 94:**

(Section 3.1.1.2, Page 3-8)

**5th line:** Show “the LPP Project topographic high point” on Fig. 3-3 since it is mentioned earlier in this chapter.

**8th line:** Calling the ROW “permanent” is a bit misleading (since a ROW is technically revocable). A better term would be “long-term” (or explain what is meant by “permanent” in a footnote).

**UDWRe Response:**

**Refer to the response to BLM Comment 86 regarding the “topographic high point.”**

**The text has been revised to address the comment concerning the ROW.**

**BLM Comment 95:**

*(Section 3.1.1.2.1, Page 3-8)*

**Second paragraph, Second line:** Change “...land to the GCNRA administered by the NPS before crossing...” to “...land to GCNRA before crossing...”

**Third paragraph, Third line:** Delete “the” before “GCNRA” (it is not proper to use “the” when referring to a proper name).

**Third paragraph, second sentence.** “A rock ridge extending to the edge of Highway 89 immediately west of Blue Pool Wash would involve either tunneling under the rock outcrop for approximately 600 feet, or a 200-foot long pipeline crossing north under the highway, a 450 foot long pipeline north of the highway, and a 200-foot long pipeline crossing south under the highway west of the rock outcrop.” Which option is it? That should be figured out by now.

**Third paragraph, third sentence.** The acronym “SITLA” has already been defined in this PLP, so don’t do so again here.

**UDWRe Response:**

**The suggested edits from the first, second, and fourth paragraphs of the above comment have been incorporated.**

**It is unknown at this time whether the pipeline would be installed by tunneling under the rock outcrop or by crossing Highway 89. An analysis will be conducted and a determination would be made during the detailed design phase of the project.**

**BLM Comment 96:**

*(Section 3.1.1.2.1, Page 3-8)*

“A rock ridge extending to the edge of Highway 89 immediately west of Blue Pool Wash would involve either tunneling under the rock outcrop for approximately 600 feet, or a 200-foot long pipeline crossing north under the highway, a 450 foot long pipeline north of the highway, and a 200-foot long pipeline crossing south under the highway west of the rock outcrop.” The proposed action should include which of these options is proposed. Are both being analyzed?

**UDWRe Response:**

**It is unknown at this time whether the pipeline would be installed by tunneling under the rock outcrop or by crossing Highway 89. An analysis will be conducted and a determination would be made during the detailed design phase of the project.**

**BLM Comment 97:**

*(Figure 3-5, Page 3-9)*

**Legend.** Change “Hydro System – South Alternative” to “Hydro System – Proposed Action”. Is this figure representing the Proposed Action? If so, just say “Hydro System” in the legend and add “Proposed Action” to the figure title instead.

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 98:**

*(Section 3.1.1.2.1, Page 3-10)*

**First paragraph, Sixth line:** “...administered by the BLM (U.S. Congress 1998).”  
Remove “U.S. Congress” and give the Public Law # instead.

**Second paragraph, Second line:** Delete “the” before “GCNRA” (it is not proper to use “the” when referring to a proper name).

**Second paragraph, Sixth line:** Insert “be” before “widened towards”.

**Fourth paragraph, Twelfth line:** Rewrite to read “length, permanent ROW area (in acres), temporary construction ROW area, and total ROW area (in acres).”

**Fourth paragraph, last sentence:** Would there then be temporary fencing? Describe this.

**UDWRe Response:**

**The text referred to in the first paragraph of the comment above had been revised.**

**The suggested edits from the second and third paragraphs of the above comment have been incorporated.**

**BLM Comment 99:**

*(Figure 3-6, Page 3-11)*

Highway Right-of-Way Construction

What is the brown object to the left of the pipeline? Please explain what the “Clear Zone” is. Is the black polygon at the left of the figure (dissected by the CL) representing the highway? If so, add that label. Add “CL= Center Line.” under “TCA= Temporary Construction Area”.

Non-Highway Right-of-Way Construction

Why is the pipeline shown both buried and above ground?

**UDWRe Response:**

The brown object is the soil pile from the excavation for the pipeline. Clear zone is an area adjacent to the roadway that where no construction activity would occur to allow for vehicles that leave the roadway to occupy. The pipeline is shown above the ground to indicate where it would be “staged” prior to placement in the ground.

Revisions to the various figures showing the above-referenced features have been made for clarity.

**BLM Comment 100:**

*(Figure 3-6, Page 3-11)*

*Annotate each map with each feature, pipelines, spoils, etc.*

**UDWRe Response:**

Revisions have been made to the figure to address the comment.

**BLM Comment 101:**

*(Table 3-2, Page 3-12)*

“Land Ownership/Management” column, segments 2 and 3. There is no “AZ SITLA” so delete the word “Utah” before SITLA.

Notes

- SITLA entry: Add “(Utah)” at the end of the line.

Footnotes

Need to add the location of the staging areas to the maps in the appendix.

**UDWRe Response:**

The suggested edits from the first paragraph and first bullet of the above comment have been incorporated.

The APE maps in the appendix have been revised to show the staging areas with a unique hatching as defined in the map legends.

**BLM Comment 102:**

*(Table 3-2, Page 3-12)*

*“Includes 18.94 acres for construction area at Cockscomb crossing cut.” Please explain where is this and what will it look like.*

**UDWRe Response:**

The Cockscomb is a prominent geological feature along the pipeline alignment west of the Paria River. It is adjacent to Hwy 89 near the northernmost point of the pipeline alignment.

**The construction area would be located along the pipeline alignment and would look like the construction area on Figure 3-6 with the exception that part of the ground surface would be on a significant slope.**

**BLM Comment 103:**

*(Section 3.1.1.2.1, Page 3-13)*

**Second line on page:** Rewrite end of line to read “ROW limits (including the temporary construction area). Any”.

**Lines 14-15:** Need to make it clear that (on BLM lands) the seed mix must be approved by the appropriate authorizing officer.

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**The project applicant would propose a seed mix to be approved by the appropriate BLM officer.**

**BLM Comment 104:**

*(Section 3.1.1.2.1.1, Page 3-13)*

**Third paragraph, eighth and ninth lines:** Need to identify the “local natural drainages” referenced because this unnatural water drainage could have impacts on resources.

**Third paragraph, last line on page:** Also need to identify the “local natural drainages” referenced here – this water discharge from the pipeline system could have impacts on resources.  
“

**UDWRe Response:**

**The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.**

**BLM Comment 105:**

*(Section 3.1.1.2.1.1, Pages 3-13 and 3-15)*

*The text says “Rock riprap would be placed immediately downstream of each discharge to help control erosion. The preliminary design identified 49 drain valves along the water conveyance pipeline.” How often would these drain valves likely be used; how much water might be released during these occasions; how are these drain valves located or aligned in terms of natural washes; and how might these water releases affect public safety, recreation, quagga mussel introductions, wildlife, and the potential creation of seasonal ponds or riparian/wetland vegetation?*

**UDWRe Response:**

**The drain valves would be used during routine maintenance and inspection activities or when making emergency repairs. It is anticipated that the period of time between when they**

are used would be measured in years. The amount of water released would vary according to the volume of water in the pipeline that would drain to each particular valve. The valves would be operated manually and the discharge would be monitored to prevent erosion in the receiving drainage. It is not anticipated that public safety or quagga mussel introductions would be an issue. Seasonal ponds would not be created and riparian/wetland vegetation would not be affected.

**BLM Comment 106:**

*(Section 3.1.1.2.1.1, Pages 3-13 to 3-15)*

*There are no images or diagrams of “Water Conveyance Pipeline Appurtenances (manways, valves, markers, and “other appurtenances”. These are needed to understand proposal and analysis of their visual effect. Particularly concerned with the “other appurtenances” which is not specified. Design standards will be necessary to ensure these elements are meet VRM objectives.*

**UDWRe Response:**

**All such appurtenances would be located in buried vaults or manholes with no elements placed above ground. Manhole covers on the ground surface would allow for access to the appurtenances.**

**BLM Comment 107:**

*(Section 3.1.1.2.1.1, Page 3-15)*

*Second line on page: Need to describe the proposed rip rap.*

*Second complete paragraph on page: Delete “the” before “GSENM”.*

*Third complete paragraph on page: Concrete monument markers or similar identifiers are mentioned as being installed (up to 1,000) – is it known approximately how many markers would actually be installed? More information is needed on these markers so it can be determined if we have a preference for the type of marker.*

**UDWRe Response:**

**Rip rap would be coarse aggregate sized to provide erosion protection. The rock would be specified to have durability. It would be produced from quarry sources (commercial or private) or produced from trench excavation materials as appropriate.**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**Regularly spaced permanent monument markers would be necessary to identify the route of the pipeline to protect against unnecessary disturbance in excavating. They must be of a size and durability to be effective to prevent unnecessary disturbance in replacement. More frequent markers would be necessary where deflections in the pipeline take place or where the pipeline would cross features like fences, property lines, roads, powerlines, etc. Until the actual route of the pipeline is determined, an estimate of up to 1,000 markers is the best information available.**



**BLM Comment 108:**

*(Section 3.1.1.2.2, Page 3-16)*

***First complete paragraph on the page, Second line:***

- *Delete “the” before “GCNRA”.*
- *The acronym “ADOT” has already been defined in this PLP, so don’t do so again here.*

***First complete paragraph on the page, lines 11, 12:*** *Delete “aquatic”.*

***Second complete paragraph, lines 1, 2:*** *Change to “... located on SITLA land west of ...”*

***Second complete paragraph, lines 10, 11:*** *Delete “aquatic”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 109:**

*(Section 3.1.1.2.2, Page 3-18)*

- ***First complete paragraph on the page, second line:*** *Change end of line to read “... near the eastern boundary of GSENM on the south side”.*
- ***First complete paragraph on the page, lines 11, 12:*** *Delete “aquatic”.*
- ***Second complete paragraph, lines 10, 11:*** *Delete “aquatic”.*
- ***After second complete paragraph:*** *Add “Project facilities would utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape.”*
- ***Third to last line on page:*** *Change end of line to be “... temporary construction ROW area for the booster”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 110:**

*(Section 3.1.1.2.2, Page 3-18)*

*The pumping station (BPS-3 Alt) on Kanab Field Office jurisdiction within T. 43 S., R. 1 W., section 6, lot 3 should be placed on adjacent SITLA land. This is a very isolated piece of KFO immediately adjacent to miles of SITLA property. To date, the proposal has not yet demonstrated why this pumping station for this State of Utah-proposed facility is on public land instead of the immediately adjacent SITLA property. (See Appendix, Map panel 15, page 23; figure 3-10; and page 3-18 of the draft.) Typically, BLM would not authorize a facility on public land when the proponent owned land suitable for that same facility immediately adjacent to the public land.*

**UDWRe Response:**

**The project applicant does not own SITLA land. It is held in trust for Utah school children and cannot be treated as applicant-owned land.**

**BLM Comment 111:**

*(Section 3.1.1.2.2, Page 3-18)*

*Under BPS-3, last sentence: The Cottonwood Road does not extend south of Hwy 89, it only exists north of Hwy 89.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 112:**

*(Figure 3-10, Page 3-20)*

*Detention basin spillway empties onto Hwy 89. Shouldn't it be designed so that it empties away from the highway?*

**UDWRe Response:**

**The detention basin spillway would be designed so that it empties into the ditch of Hwy 89.**

**BLM Comment 113:**

*(Figure 3-10, Page 3-20)*

*Why isn't BPS-3 located on State land a few hundred feet to the east instead of on BLM-managed lands?*

**UDWRe Response:**

**Refer to the response to BLM Comment 110.**

**BLM Comment 114:**

*(Figure 3-11, Page 3-21)*

*Fig. 3-11: There is symbology depicted on the map with no explanation - please include a legend. Please fix this in all maps and figures.*

**UDWRe Response:**

**UDWRe's view is that the figure is appropriately labeled.**

**BLM Comment 115:**

*(Section 3.1.1.2.3, Page 3-22)*

**Third line:** Delete "the" before "GSENM". Add the following language to this paragraph: "Project facilities would utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape."

*Line 15: Insert “as described in Sec. 3.1.3.2.3” after “security fencing”.*

*Line 16: Change end of line to read “... temporary construction ROW area”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 116:**

*(Section 3.1.1.2.4, Page 3-22)*

***First paragraph, first paragraph.** Change to “The Water Conveyance System ROW requirements are summarized in Table 3-4 by land ownership and management. Permanent ROW area would be 652.90 acres, construction ROW area would be 339.44 acres, and total ROW area would be 992.34 acres.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 117:**

*(Table 3-4, Page 3-24)*

*Delete the word “Utah” before SITLA under the Land Ownership/Management column.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 118:**

*(Table 3-4, Page 3-24)*

*“Includes 18.94 acres for construction area at Cockscomb crossing cut on Bureau of Land Management – GSENM-administered land.” Explain where this is and what it looks like.*

**UDWRe Response:**

**Refer to the response to BLM Comment 102.**

**BLM Comment 119:**

*(Section 3.1.1.3.1, Page 3-25)*

***Second paragraph***

- ***Line 2:** The acronym “SITLA” has already been defined in this PLP, so don’t do so again here.*
- ***Line 3:** Delete “the” before “GSENM”.*

***Third paragraph***

- ***Line 3:** Change end of line to “... land in GSENM and the Arizona Strip”.*
- ***Line 4:** Change to “... Arizona State Land Department...”*

- **Line 5:** Change end of line to “... Kane County, Utah to the western boundary of GSENM”.
- **Line 9:** Change to “... extend southwest through the BLM utility corridor to the eastern boundary of ...”
- **Lines 10-14:** Change to “Indian Reservation where it turns south then west along the boundary of the Reservation (outside the designated utility corridor) to where it would rejoin the utility corridor (Map Panels 31, 32, 33, and 37 in Appendix E), in Mohave County, Arizona, approximately parallel to the south boundary of the Reservation (Map Panels 36, ...”

Fourth paragraph

- **Line 2:** Spell out Utah instead of abbreviating.
- **Line 4:** Change to “and Arizona State Land Department”.
- **Line 7:** Spell out Arizona and Utah instead of abbreviating.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 120:**

*(Section 3.1.1.3.1, Page 3-27)*

**Second line on page:** Spell out Utah instead of abbreviating.

**First complete paragraph on page, line 4:** Delete “and Utah” before “SITLA”.

**Third complete paragraph on page, line 4:** WCWCD – if this is the first place this acronym is used, define it.

**Fourth complete paragraph on page, line 6:** Delete “(i.e., a slope that rises one foot vertically for every 0.75 to two feet horizontally)” – this has already been explained on p. 3-10.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 121:**

*(Section 3.1.1.3.1, Page 3-28)*

**Last sentence on page.** Would there be temporary security fencing and/or access restrictions on the penstock segment of the ROWs? If so, describe that here.

**UDWRe Response:**

**Refer to Section 3.1.3.2.3.2 for a description of the security fencing.**

**BLM Comment 122:**

*(Figure 3-14, Page 3-28)*

Highway Right-of-Way Construction

What is the brown object to the left of the pipeline? Please explain what the “Clear Zone”

is.

*Is the black polygon at the left of the figure (dissected by the CL) representing the highway? If so, add that label.*

*Add “CL= Center Line.” under “TCA= Temporary Construction Area”.*

*Non-Highway Right-of-Way Construction*

*Why is the pipeline shown both buried and above ground?*

**UDWRe Response:**

**Refer to the response to BLM Comment 99.**

**BLM Comment 123:**

*(Table 3-5, Page 3-29)*

*Notes: Footnote “a” – please identify where this staging area on public land would be located.*

**UDWRe Response:**

**The staging areas are shown with a unique hatching as defined in the legends on the APE maps in Appendix E.**

**BLM Comment 124:**

*(Section 3.1.1.3.1, Page 3-30)*

**2nd line on page:** *Change to “... within the ROW limits including the temporary construction area).”*

**Lines 14, 15:** *Need to make it clear that (on BLM lands) the seed mix must be approved by the appropriate authorizing officer.*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**The comment in the second paragraph is noted. The project applicant would propose a seed mix to be approved by the appropriate BLM officer.**

**BLM Comment 125:**

*(Section 3.1.1.3.1, Page 3-30)*

**Second paragraph, last sentence.** *“The preliminary design identified 72 manways along the Hydro System penstocks.” Need to know where these would be.*

**UDWRe Response:**

**The locations of the manways are unknown at this time and would be determined during the detailed design phase of the project.**

**BLM Comment 126:**

*(Section 3.1.1.3.1, Page 3-30)*

*Third paragraph, last sentence on the page: Change “can’t” to “cannot.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 127:**

*(Section 3.1.1.3.1.1, Pages 3-30 to 3-32)*

*There are no images or diagrams of **Penstock Appurtenances (manways, valves, markers, and “other appurtenances”**. These are needed to understand proposal and analysis of their visual effect. Particularly concerned with the “other appurtenances” which is not specific. Design standards will be necessary to ensure whatever these are meet VRM objectives.*

**UDWRe Response:**

**Refer to the response to BLM Comment 106.**

**BLM Comment 128:**

*(Section 3.1.1.3.1.1, Page 3-32)*

***First two sentences on the page.** “Reservoir would be discharged from the drain valves through energy dissipaters as necessary to local natural drainages. Rock riprap would be placed immediately downstream of each discharge to help control erosion. The preliminary design identified 55 drain valves along the penstock segments.” Need to know NOW where these would be so an impacts analysis can be done.*

**UDWRe Response:**

**Refer to the response to BLM Comment 104.**

**BLM Comment 129:**

*(Section 3.1.1.3.1.1, Page 3-32)*

***Third complete paragraph on page.** Concrete monument markers or similar identifiers are mentioned as being installed (up to 1,000) – Is it known approximately how many markers would actually be installed? Need more information on these markers to determine if we have a preference for the type of marker.*

**UDWRe Response:**

**Refer to the end of the response to BLM Comment 107.**

**BLM Comment 130:**

*(Section 3.1.1.3.2, Page 3-33)*



**First paragraph, last sentence.** “Each hydro station site would be surrounded by security fencing with a locked gate on the access road.” Describe the security fencing - what type, height, etc.?

**UDWRe Response:**

**The security fencing is described in Section 3.1.3.2.3.2 of the text.**

**BLM Comment 131:**

(Section 3.1.1.3.2, Page 3-33)

**Second paragraph, first sentence.** Delete “the” before “GSENM”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 132:**

(Section 3.1.1.3.2, Page 3-35)

**Second complete paragraph on page:**

- **Line 1:** Insert “(in the St. George Field Office)” after “BLM-administered land”.
- **Lines 11, 12:** Delete “on BLM St. George Field Office administered land”.
- Add the following language to the end of this paragraph: “Project facilities would utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 133:**

(Section 3.1.1.3.3, Page 3-35)

**First paragraph, first sentence.** Insert “(in the St. George Field Office)” after “BLM-administered land”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 134:**

(Section 3.1.1.3.3, Page 3-42)

**5th line:**

- This line states “An emergency spillway would be designed into the right abutment of the south embankment, with drainage to a wash south of the Hurricane Cliffs Pumped Storage Hydro Station site and tributary to Fort Pierce Wash.” For public safety, there needs to be some sort of emergency notification system if water volume above a certain amount is diverted into this drainage (since Fort Pierce Wash is heavily used for ATV

- *recreation, and the wash goes right through St. George).*  
• *Describe this perimeter security fence – what type, height, etc.?*

**Last line of section:** Delete “on BLM St. George Field Office- administered land.”

**UDWRe Response:**

**The Emergency Action Plan (EAP) for the reservoir, as required by Utah’s Division of Dam Safety requires that emergency notification systems be in place for each of the regulated reservoirs. This requirement would be implemented.**

**Refer to Section 3.1.3.2.3.2 of the text for a description of the security fencing.**

**The suggested edits from the last paragraph of the above comment have been incorporated.**

**BLM Comment 135:**

*(Section 3.1.1.3.4, Page 3-42)*

**Second paragraph on the page, last sentence.** “The hydroelectric energy generated during peak demand periods would be sold at a relatively high rate compared to the power required to pump the water back to the forebay reservoir purchased at a relatively low rate, with the differential between the rates resulting in **revenue**.” Where is this revenue going?

**UDWRe Response:**

**Power generated by the project would be used to offset operating costs.**

**BLM Comment 136:**

*(Section 3.1.1.3.4, Page 3-45)*

**10th line on page:** Add the following text after “... yard ground elevation”.

*“The powerhouse building and appurtenant facilities would utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 137:**

*(Section 3.1.1.3.4, Page 3-45)*

**First paragraph on the page, second to last sentence.** “The powerhouse yard would be surrounded by security fencing, with access through a lockable, swinging gate at the turnout to the access road.”

- *Describe the security fencing – what type, height, etc.?*

**UDWRe Response:**

**Refer to Section 3.1.3.2.3.2 of the text for a description of the security fencing.**

**BLM Comment 138:**

*(Section 3.1.1.3.4, Page 3-45)*

***First paragraph on the page, last sentence.** “Motion-detection lighting would be installed within the powerhouse yard as part of the site security system.” Be sure this lighting uses “night sky sensitive” lighting (to include things such as directing all lights downward, using shielded lights, minimum illumination necessary, etc.).*

**UDWRe Response:**

**Your comment has been noted. Such considerations would be incorporated into the design as practicable.**

**BLM Comment 139:**

*(Section 3.1.1.3.4, Page 3-46)*

***Second line on page.** “A chain-link security fence with a lockable gate would be constructed around the switchyard perimeter.” What would be the height of this security fence?*

**UDWRe Response:**

**Refer to Section 3.1.3.2.3.2 of the text for a description of the security fencing.**

**BLM Comment 140:**

*(Section 3.1.1.3.4, Page 3-46)*

***Fifth line on page.** The “lighting system” should have night sky considerations (to include things such as directing all lights downward, using shielded lights, minimum illumination necessary, etc.).*

**UDWRe Response:**

**Refer to the response to BLM Comment 138.**

**BLM Comment 141:**

*(Page 3-46)*

*After carefully scrutinizing this construction drawing, there are no measurements that list the actual height of the Afterbay Dam. Use of an engineering scale was required to determine that it was 120 feet tall. This is significant. A 120 foot tall structure in an otherwise natural area will be significant and imposing. This structure does fit into the existing VRM Class IV, but given the volume of traffic on the Hurricane Cliffs Road and the intense recreation pressure this area receives, a lot of people will see this structure. It is important that the public understands how this project will change the area and the actual height of the structure is the first thing people will be looking for.*

**UDWRe Response:**

**Your comment is noted. Please note that to date no construction drawings have been submitted. All drawings submitted have been and are at this time conceptual in nature and thus lacking in design details.**

**BLM Comment 142:**

*(Section 3.1.1.3.5, Page 3-48)*

*First paragraph on the page, third sentence. “The emergency spillway would drain south to a dry wash that is tributary to Fort Pierce Wash below the Hurricane Cliffs.” For public safety, there needs to be some sort of emergency notification system if water volume above a certain amount is diverted into this drainage (since Fort Pierce Wash is heavily used for ATV recreation, and the wash goes right through St. George).*

**UDWRe Response:**

**Refer to the response to BLM Comment 134.**

**BLM Comment 143:**

*(Section 3.1.1.3.5, Page 3-48)*

*9th line on the page. “A perimeter security fence would surround the afterbay reservoir and embankment.” Describe the security fence.*

**UDWRe Response:**

**Refer to Section 3.1.3.2.3.2 of the text for a description of the security fencing.**

**BLM Comment 144:**

*(Section 3.1.1.3.8, Page 3-52)*

*Second line. Insert “area” after “Permanent ROW”.*

*3rd line: Insert “area” after “construction ROW” and after “total ROW”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 145:**

*(Table 3-7, Page 3-52)*

*Notes. Footnote “a” references three construction staging areas – need to know NOW where they would be.*

**UDWRe Response:**

**Refer to the response to BLM Comment 123.**

**BLM Comment 146:**

*(Section 3.1.1.4.1, Page 3-53)*

*Second paragraph, 12th line. Change to "... permanent ROW area, temporary construction ROW area, and total ROW area."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 147:**

*(Section 3.1.1.4.1, Page 3-53)*

*Third paragraph, first sentence. Change to "The water conveyance pipeline construction would be performed in segments, each starting with clearing, grubbing and grading within the ROW limits (including the temporary construction area)."*

**UDWRe Response:**

**The suggested edit has been incorporated. The text "areas as necessary" was added after "temporary construction".**

**BLM Comment 148:**

*(Section 3.1.1.4.1, Page 3-53)*

*Third paragraph, lines 14, 15. Need to make it clear that (on BLM lands) the seed mix must be approved by the appropriate authorizing officer.*

**UDWRe Response:**

**Refer to the last item in the response to BLM Comment 124.**

**BLM Comment 149:**

*(Section 3.1.1.4.1, Page 3-54)*

Highway Right-of-Way Construction

*What is the brown object to the left of the pipeline? Please explain what the "Clear Zone" is. Is the black polygon at the left of the figure (dissected by the CL) representing the highway? If so, add that label.*

*Add "CL= Center Line." under "TCA= Temporary Construction Area".*

Non-Highway Right-of-Way Construction

*Why is the pipeline shown both buried and above ground?*

**UDWRe Response:**

**Refer to the response to BLM Comment 99.**

**BLM Comment 150:**

*(Section 3.1.1.4.1.1, Page 3-56)*

**Second paragraph, sixth and seventh sentence.** “The low points of the water conveyance pipeline system that can’t be drained back through the pump stations would be discharged through energy dissipaters as necessary to local natural drainages. Rock riprap would be placed immediately downstream of each discharge to help control erosion.” Need to identify these drainages because this unnatural water drainage could have impacts on resources.

**UDWRe Response:**

The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.

**BLM Comment 151:**

(Section 3.1.1.4.1.1, Page 3-56)

**Second paragraph, 9th line:** Change “can’t be” to “cannot be.”

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 152:**

(Section 3.1.1.4.1.1, Page 3-57)

**Third paragraph, last sentence.** Concrete monument markers or similar identifiers are mentioned as being installed (up to 1,000) – Approximately how many markers would actually be installed? Need more information on these markers to determine if we have a preference for the type of marker.

**UDWRe Response:**

Refer to the response to BLM Comment 107.

**BLM Comment 153:**

(Section 3.1.1.5, Page 3-57)

**First paragraph, fourth sentence.** “The Electrical Transmission System would consist of overhead electric power transmission lines, buried electric power transmission lines, three-ring switch stations, electrical substations, and staging areas for power facility construction.” Fig. 3-1 needs to show which lines would be overhead and which would be buried, and then need a table to show miles of each (there are different environmental impacts from overhead versus buried).

**UDWRe Response:**

It is unknown at this time which, if any, transmission lines would be buried. Such determinations would be made during the detailed design phase of the project.

**BLM Comment 154:**

(Section 3.1.1.5, Page 3-58)



*Electrical transmission System – several transmission line structures are shown – Please know that BLM will be the entity who will decide which structures are used on BLM-managed public lands, based upon visual resource management and other resource impacts.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 155:**

*(Section 3.1.1.5.1, Page 3-58)*

**First paragraph, first sentence.** *“The existing Glen Canyon Substation would be upgraded by Western Area Power Administration (WAPA) to the meet load increases resulting from the LPP Project by Page Electric Utility (PEU) and Garkane Energy (Garkane).” This is a confusing sentence...will the Substation be upgraded by WAPA or PEU/Garkane?*

**UDWRe Response:**

**WAPA would upgrade the Glen Canyon Substation. The text has been revised for clarity.**

**BLM Comment 156:**

*(Section 3.1.1.5.1, Page 3-58)*

**First paragraph, last sentence.** *Change “...Arizona on public land administered...” Change to “...Arizona on land administered...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 157:**

*(Section 3.1.1.5.1.2, Page 3-58)*

**First paragraph, last sentence.** *Change to “The Intake Switch Station would require 0.10 acre and would be located in Coconino County, Arizona on NPS lands within GCNRA...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 158:**

*(Section 3.1.1.5.1.3, Page 3-58)*

**First paragraph, second sentence.** *Change to “The 69-kV overhead transmission line on single-pole towers would require a 60-foot wide ROW (see Figure 3-32) for approximately 0.83 miles in Coconino County, Arizona on land administered by WAPA, NPS, and Bureau of Reclamation...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 159:**

(Section 3.1.1.5.1.4, Page 3-61)

*Lines 2-5:* Change to “The 69-kV overhead transmission line on single-pole towers would require a 60-foot wide ROW (see Figure 3-32) for approximately 0.80 miles in Coconino County, Arizona on land administered by the NPS within GCNRA)...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 160:**

(Section 3.1.1.5.1.5, Page 3-61)

*Second sentence.* Change to “The 230-kV overhead transmission line...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 161:**

(Section 3.1.1.5.1.5, Page 3-61)

*Third sentence.* Change to “The transmission line would require a 150-foot wide ROW (see Figure 3-33) for approximately 36 miles through Coconino County, Arizona, and Kane County, Utah, within the West Wide Energy Corridor through Township 43 South, Range 2 West, Section 2 on lands administered by WAPA, BLM (ASFO and GSENM), NPS (GCNRA), and SITLA...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 162:**

(Section 3.1.1.5.1.6, Page 3-61)

*First paragraph, last sentence.* Change “...BLM – GESNM...” to “...BLM (GSENM)...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 163:**

(Section 3.1.1.5.1.7, Page 3-61)

*Second sentence.* Change “...new 138-kV transmission...” Change to “...new 138-kV overhead transmission...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 164:**

*(Section 3.1.1.5.1.7, Page 3-61)*

**Third sentence.** Change to “This 138-kV transmission line would require a 100-foot wide ROW (see Figure 3-34) for approximately seven miles across SITLA land...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 165:**

*(Section 3.1.1.5.1.8, Page 3-61)*

**Second sentence.** Change to “This 138-kV overhead transmission line would require a 100-foot wide ROW (see Figure 3-34) for approximately 5.9 miles in Kane County, Utah, on public land administered by the BLM (Kanab Field Office) (see Figure 3-31 and Map Panels 11 through 13 in Appendix E) per Table 3-9, also on SITLA land.”

*Per Table 3-9, this transmission line is also on SITLA land ... please add that here.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 166:**

*(Section 3.1.1.5.2, Page 3-64)*

**Second sentence.** Change to “The permanent ROW area would be 828 acres, construction ROW area would be 56.08 acres, and total ROW area would be 884.08 acres.”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 167:**

*(Section 3.1.1.5.3.1, Page 3-64)*

**Second sentence.** Change to “...approximately 0.10 mile in Kane County, Utah...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 168:**

*(Section 3.1.1.5.3.2, Page 3-64)*

**Second sentence.** Change to “...0.95 mile in Mohave County...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 169:**

*(Table 3-9, Page 3-65)*

*Columns need to be added to this table listing the length of overhead versus buried lines.*

<i>Transmission Line Lengths (miles)</i>	
<i>Overhead</i>	<i>Buried</i>

**UDWRe Response:**

**It is unknown at this time which, if any, transmission lines would be buried. Such determinations would be made during the detailed design phase of the project.**

**BLM Comment 170:**

*(Table 3-9, Page 3-65)*

*Remove the word “Utah” before “SITLA” on rows 5, 7, and 8.*

*Notes.* Change “SITLA = School Institutional Trust Lands Administration” to “SITLA = Utah School Institutional Trust Lands Administration”

*Notes.* Footnote “b” refers to “two construction staging areas on public land administered by the Bureau of Land Management – Arizona Strip F.O.” Need to know NOW where these are.

**UDWRe Response:**

**The suggested edits from the first and second paragraphs of the above comment have been incorporated.**

**The staging areas are shown on the APE maps in Appendix E.**

**BLM Comment 171:**

*(Section 3.1.1.5.3.4, Page 3-68)*

*First line on the page, first sentence.* Change “...0.6 mile long...” to “...0.6 mile...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 172:**

*(Section 3.1.1.5.3.6, Page 3-68)*

*Second sentence.* Change “...8.35 miles long...” to “...8.35 miles...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 173:**

*(Section 3.1.1.5.3.6, Page 3-68)*

**Second sentence.** Change "...BLM – St. George Field Office, Utah SITLA..." to "...BLM – St. George Field Office, SITLA..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 174:**

*(Section 3.1.1.5.3.7, Page 3-68)*

**Second sentence.** Change to "This 345-kV overhead transmission line would require a 150-foot wide ROW (see Figure 3-37) for approximately 10.9 miles in Washington County, Utah..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 175:**

*(Section 3.1.1.5.3.7, Page 3-68)*

**Second sentence.** Change to "This 69-kV overhead transmission line on singlepole towers would require a 60-foot wide ROW (see Figure 3-32) for approximately 3.48 miles in Washington County, Utah..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 176:**

*(Section 3.1.1.5.4, Page 3-68)*

**Second sentence.** Change to "Permanent ROW area would be 293.39 acres, construction ROW area would be 62.44 acres, and total ROW area would be 355.83 acres."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 177:**

*(Table 3-10, Page 3-70)*

Columns need to be added to this table listing the length of overhead versus buried lines.

*Transmission Line Lengths (miles)*

Overhead

Buried

Remove the word “Utah” before “SITLA” on row 6.

**Notes.** Change “SITLA = School Institutional Trust Lands Administration” to “SITLA = Utah School Institutional Trust Lands Administration”

**Notes.** Footnote “C” refers to “one construction staging area on public land administered by the Bureau of Land Management – Arizona Strip F.O.” Need to know NOW where

**UDWRe Response:**

**It is unknown at this time which, if any, transmission lines would be buried. Such determinations would be made during the detailed design phase of the project.**

**Map Panel 62 has been revised to show the staging area with a unique hatching as defined in the map legend.**

**BLM Comment 178:**

*(Section 3.1.2.1, Page 3-71)*

**First paragraph, first sentence.** Change to “The Water Intake System would be operated on a water demand-basis to meet **M&I** demands by the WCWCD and KCWCD.”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 179:**

*(Section 3.1.2.1, Page 3-71)*

**First paragraph, last line.** Change “district’s” to “districts”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 180:**

*(Section 3.1.2.1, Page 3-71)*

**Second paragraph, sentences one and two.** “The Water Intake System horizontal tunnels would be operated to selectively divert the highest quality water from the top 100 feet of Lake Powell. The three levels of intake tunnels (high = 3,575 feet MSL; middle = 3,475 feet MSL; and low = 3,375 feet MSL) would provide flexibility to divert Lake Powell water between water surface elevations 3,700 feet MSL and 3,400 feet MSL.” Is this at full capacity, or reduced lake levels (as is more likely)? And what is the current lake level?

**UDWRe Response:**



The intake tunnels are designed to divert water from Lake Powell when the lake is at full capacity and when the lake levels are reduced. According to the website “lakepowell.water-data.com”, the elevation of the water surface was 3591.21 above msl on Saturday, April 16<sup>th</sup>, 2016.

**BLM Comment 181:**

(Section 3.1.2.1, Page 3-71)

*Third paragraph, fourth sentence. The acronym “EPA” has already been defined in this PLP, so don’t do so again here.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 182:**

(Section 3.1.2.1, Page 3-72)

*Fourth paragraph on the page, first sentence. “...500 psi...” Is this the first use of the term “psi”? If so, define it and also add to the list of acronyms.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 183:**

(Section 3.1.2.1, Page 3-72)

*Fourth paragraph on the page, last sentence. “...return pipeline that would infrequently discharge into the right spillway...” What is meant by “infrequently”?*

**UDWRe Response:**

The time period between occurrences would most likely be measured in years.

**BLM Comment 184:**

(Section 3.1.2.1, Page 3-72)

*Sixth paragraph on the page. “Potable water would be supplied from the aquifer intercepted by the intake shafts or a separate deep well on the Water Intake Pump Station site. Potable water would be used for drinking, washing, toilet flushing, hose-down washing, chemical motive water, and fire sprinklers. Wastewater would be collected in a buried storage tank with a level monitor for early notification of required pump-out. The pumped-out wastewater would be transported to the Page wastewater treatment facility for treatment.” Add these to Fig. 3-4 and to Sec. 3.1.1.1.1.*

**UDWRe Response:**

It is unknown at this time where the buried storage tank for the wastewater would be located. Text has been added to Section 3.1.1.1.1.

**BLM Comment 185:**

*(Section 3.1.2.1, Page 3-72)*

*Seventh paragraph on the page, first sentence. Change "...by Page Electric Utility to power..." Change to "...by PEU to power..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 186:**

*(Section 3.1.2.1, Pages 3-72 and 3-73)*

*Last paragraph on the page, first sentence. "The electricity generated to meet the Water Intake System demand would have been previously analyzed and documented for NEPA compliance on regional electric power production and transmission facilities." Remove this whole sentence because it contradicts Sec. 3.1.1.5.1.*

**UDWRe Response:**

**UDWRe's view is that the two statements are not contradictory. One statement refers to power supplied to the Water Intake System and the other refers to power generated to meet Water Intake System demand. No change has been made to the text.**

**BLM Comment 187:**

*(Section 3.1.2.2, Page 3-73)*

*First paragraph, sentences 7-9. "Drain valves would be operated to drain pipeline segments into natural drainage channels for annual pipeline inspection, maintenance, and repair activities. The drain valves would temporarily discharge the LPP Project water into the natural drainage channels onto rock riprap to dissipate the velocity at flows well below channel capacity. The flow released from the drain valves would be adjusted and monitored to avoid velocities causing bank erosion in the receiving natural drainage channels." Need to know NOW where these would be so an impacts analysis can be done.*

**UDWRe Response:**

**It is unknown at this time where drain valves would be located and how many would be needed. The location of pipeline drain valves would be determined during the detailed design. The pipeline would be designed to minimize the number of drains by maintaining a near constant grade of the pipeline even though the local topography has a lot of variation. Drain valves would be installed on drains, which would be operated by personnel; they would not be remotely operated or automated. Erosion protection at the discharge points would be designed to prevent erosion and causing impacts at the point of discharge.**

**BLM Comment 188:**

*(Section 3.1.2.2, Page 3-73)*

**First paragraph, sentence nine.** “The flow released from the drain valves would be adjusted and monitored to avoid velocities causing bank erosion in the receiving natural drainage channels.”  
How would it be adjusted and monitored?

**UDWRe Response:**

**Refer to the response to BLM Comment 187.**

**BLM Comment 189:**

*(Section 3.1.2.2, Page 3-73)*

**Second paragraph, first sentence.** “The four booster pump stations (BPS)...” No need to keep redefining the same acronym.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 190:**

*(Section 3.1.2.2, Page 3-74)*

**Second paragraph on the page, fourth sentence.** The acronym “HVAC” has already been defined in this PLP, so don’t do so again here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 191:**

*(Section 3.1.2.2, Page 3-74)*

**Fourth paragraph on the page, first sentence.** The acronym “PEU” has already been defined in this PLP, so don’t do so again here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 192:**

*(Section 3.1.2.2, Page 3-74)*

**Fourth paragraph on the page, first sentence.** The acronym “VFD” has already been defined in this PLP, so don’t do so again here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 193:**

*(Section 3.1.2.2, Page 3-74)*

*Fourth paragraph on the page, last sentence. “The electricity generated to meet the BPS demand would have been previously analyzed and documented for NEPA compliance.” Remove this sentence. This is not true...electricity for the 4 BPSs is analyzed as part of this PLP (per Sect. 3.1.1.5.1).*

**UDWRe Response:**

**Refer to the response to BLM Comment 186. Based upon similar reasoning, UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 194:**

*(Section 3.1.2.3, Page 3-74)*

***First paragraph, seventh sentence.** “Drain valves would be operated to drain penstock segments into natural drainage channels for annual penstock inspection, maintenance, and repair activities. The drain valves would temporarily discharge the LPP Project water into the natural drainage channels onto rock riprap to dissipate the velocity at flows well below channel capacity.” Need to know NOW where these would be so an impacts analysis can be done.*

**UDWRe Response:**

**Refer to the response to BLM Comment 187.**

**BLM Comment 195:**

*(Section 3.1.2.3, Page 3-75)*

***First paragraph on the page, second sentence.** “The flow released from the drain valves would be adjusted and monitored to avoid velocities causing bank erosion in the receiving natural drainage channels.” How would these be adjusted and monitored?*

**UDWRe Response:**

**Refer to the response to BLM Comment 187.**

**BLM Comment 196:**

*(Section 3.1.2.3, Page 3-75)*

***6th line on page:** The acronym “HS” has already been defined in this PLP, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 197:**

*(Section 3.1.2.3, Page 3-75)*

***Third paragraph, ninth sentence.** Change “Heating, ventilation and air conditioning...” to “HVAC...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 198:**

*(Section 3.1.2.3, Page 3-76)*

**First paragraph on the page, eighth sentence.** “Some of the water released daily from the forebay reservoir for hydroelectric generation in the pumped storage powerhouse would flow through the afterbay reservoir and downstream penstock to the Sand Hollow hydroelectric generating station and discharge into Sand Hollow Reservoir to meet St. George area M&I water demands.” Where would the rest of the released water go?

**UDWRe Response:**

**Depending upon the system operational regime in place at the time, water not released from the afterbay reservoir to flow to San Hollow Reservoir would be stored in the afterbay reservoir, where it could be pumped back to the forebay reservoir or stored for subsequent release to Sand Hollow Reservoir.**

**BLM Comment 199:**

*(Section 3.1.2.3, Page 3-76)*

**Second paragraph, third sentence.** “The station would be manned continuously by operations and maintenance staff to monitor, operate and maintain the hydraulic, mechanical and electrical equipment in the powerhouse and to monitor, operate and maintain the forebay and afterbay reservoirs as part of the LPP Project.” Would this be manned 24/7 or during this 10 hour peak demand period?

**UDWRe Response:**

**It is likely that the Hurricane Cliffs Hydro Station would be manned continuously during operations, whether it is engaged in pumping or hydroelectric generation operations. It may not be manned if the facility is not in operation.**

**BLM Comment 200:**

*(Section 3.1.2.3, Page 3-76)*

**Second paragraph, fourth sentence.** The acronym “HVAC” has already been defined in this PLP, so don’t do so again here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 201:**

*(Section 3.1.2.3, Page 3-76)*

**Second paragraph, seventh sentence.** “Potable water would be supplied from the Hurricane water system. Potable water would be used for drinking, washing, toilet flushing, hose-down

washing, chemical motive water, and fire sprinklers. Wastewater would be collected in a buried storage tank with a level monitor for early notification of required pump-out. The pumped-out wastewater would be transported to a St. George area wastewater treatment facility for treatment.

*How will this be transported? That would be a lot of water.*

**UDWRe Response:**

The wastewater would be transported with wastewater pump and transport trucks. It is anticipated that such methods of transport would have sufficient capacity to service the facility as there is anticipated to be fairly low amounts of water used during the day that would be collected by the wastewater tank.

**BLM Comment 202:**

*(Section 3.1.2.3, Page 3-76)*

**Second paragraph, twelfth sentence:** *The electricity generated to meet the station demand would have been previously analyzed and documented for NEPA compliance. In what NEPA documents? If stated here those documents should be stated.*

**UDWRe Response:**

UDWRe's view is that researching for inclusion into this document the NEPA compliance history for existing electrical generation systems that would or could supply the power to meet the Hurricane Cliffs Hydro Station demand is beyond the scope of this document.

**BLM Comment 203:**

*(Section 3.1.2.3, Page 3-76)*

**Third paragraph, fourth sentence.** *"The intake for pumping water to the forebay reservoir would be located in the tailrace channel, and would be protected with a trash rack to collect incidental debris, which would be cleaned from the trash rack as necessary." This would be disposed of how and where?*

**UDWRe Response:**

Sticks and other organic debris would be appropriately disposed of. Garbage would be collected and transported to an approved landfill.

**BLM Comment 204:**

*(Section 3.1.2.3, Page 3-77)*

**First paragraph on the page, second sentence.** *"The intake gate structure leading to the outlet tunnel would have a trash rack to collect incidental debris, which would be cleaned as necessary." This would be disposed of how and where?*

**UDWRe Response:**

Refer to the response to BLM Comment 203.



**BLM Comment 205:**

*(Section 3.1.2.3, Page 3-77)*

*Third paragraph, eleventh sentence. Change “Heating, ventilation and air conditioning...” to “HVAC...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 206:**

*(Section 3.1.2.5, Page 3-78)*

*First paragraph, second sentence. Change “...Page Electric Utility...” to “...PEU...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 207:**

*(Section 3.1.3, Page 3-78)*

*The text says “The final LPP Project design may change from the preliminary design described in this chapter, and local site conditions (e.g. subsurface soil and rock data) may change final design and implementation, which could change proposed environmental measures.” If the final LPP Project design occurs after the NEPA process is finished and the BLM ROD is signed, how would or might these possible changes affect the environmental measures committed to in the FEIS and ROD? How broad or narrow would this discretion be on possible changes, and who would make the decisions on such changes?*

**UDWRe Response:**

**UDWRe’s expectation is that the LPP Project parameters examined during the NEPA and FEIS processes and authorized by the ROD will be sufficiently scoped to allow for flexibility in the design process such that situations as described in the comment do not arise. Categorical Exclusions and Environmental Assessments allow for minor changes in projects following the release of a ROD on an EIS.**

**BLM Comment 208:**

*(Section 3.1.3.1, Page 3-78)*

*Third paragraph, last sentence. “(U.S. Congress 1998)” ... is this the proper format in which to cite a Public Law in a report?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 209:**

*(Section 3.1.3.1.1, Page 3-79)*

*First two sentences at the top. Need to include a stipulation/BMP on restricting use of equipment when soils are wet, something such as: “Construction activities would be limited to periods when the soil and ground surface are not wet in order to avoid soil compaction.”*

**UDWRe Response:**

**BMPs are written and structured to limit and control impacts. For Example, silt fence, etc. has the ability to control sedimentation when soils are wet. Specific BMPs can be put in place to manage soil compaction, but limiting all construction activities to dry soil conditions is inappropriate for a desire to manage soil compaction during reclamation and prepreatory work for seeding.**

**BLM Comment 210:**

*(Section 3.1.3.1.2, Page 3-79)*

*Is “Buckhorn Gulch” supposed to be “Buckskin Gulch”?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 211:**

*(Section 3.1.3.1.3, Page 3-79)*

*First paragraph, first sentence. Insert “(HCP)” after “Habitat Conservation Plan.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 212:**

*(Section 3.1.3.1.3, Page 3-79)*

*Second paragraph, first sentence. Change “...may impact listed or special status...” to “...may impact special status...” Note: “Special status” includes T&E species.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 213:**

*(Section 3.1.3.1.3, Page 3-79)*

*Fourth paragraph. Please add the following protection measure (about wildlife and trenches): Open trenches have the potential to trap and injure wildlife. During pipeline construction these risks will be mitigated by minimizing the length of time trenches are left open, providing escape avenues (lateral trenches) for wildlife when left overnight, and inspecting the trenches prior to backfill activities.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 214:**

*(Section 3.1.3.1.3, Page 3-79)*

***Fourth paragraph, last sentence.*** Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD." (Define the acronym first place used.)

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 215:**

*(Section 3.1.3.1.3, Page 3-79)*

***Fourth paragraph, last sentence.*** Add line spacing in between end of this paragraph and beginning of the fifth paragraph.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 216:**

*(Section 3.1.3.1.3, Page 3-80)*

***First paragraph, last sentence.*** Change "...or special status species." Change to "...or other special status species."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 217:**

*(Section 3.1.3.1.3, Page 3-80)*

***Second paragraph, last sentence.*** Change "...Utah Division of Wildlife Resources or ADFG." Change to "...UDWLR or AGFD."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 218:**

*(Section 3.1.3.1.3, Page 3-80)*

***Third paragraph, last sentence.*** "An annual written report would be provided to the BLM." Will it also be provided to the NPS?

**UDWRe Response:**

**Yes. The text has been revised to address the comment.**

**BLM Comment 219:**

*(Section 3.1.3.1.3.1, Page 3-80)*

*First line: Replace “sensitive” with “special status”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 220:**

*(Section 3.1.3.1.3.1, Page 3-81)*

*Fourth line on the page. Should this be “special status plants”?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 221:**

*(Section 3.1.3.1.3.1, Page 3-81)*

*Second paragraph, sentences 1, 2, and 4. There are 3 references to “sensitive” species ... should this include T&E species also?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 222:**

*(Section 3.1.3.1.3.1, Page 3-81)*

*Third paragraph. Add line spacing in between end of this paragraph and beginning of the fourth paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 223:**

*(Section 3.1.3.1.3.1, Page 3-81)*

*Last line in section: Should this be “special status species” instead of “sensitive species”?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 224:**

(Section 3.1.3.1.3.2, Page 3-81)

**Section title.** Change “Mohave Desert Tortoise” to “Mojave Desert Tortoise”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 225:**

(Section 3.1.3.1.3.2, Page 3-81)

**First paragraph, first sentence.** Change “Mohave Desert tortoise” to “Mojave Desert tortoise”

**UDWRe Response:**

**The suggested edit has been incorporated. The spelling of “Desert” has been changed to a lower case “d”.**

**BLM Comment 226:**

(Section 3.1.3.1.3.2, Page 3-81)

**First paragraph, first sentence.** Change “...Habitat Conservation Plan (HCP) (Washington County Commission, 1995).” to “...HCP (Washington County Commission 1995).”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 227:**

(Section 3.1.3.1.3.2, Page 3-81)

**Second paragraph, second sentence.** Change the semicolon to a comma “...match construction activity, ...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 228:**

(Section 3.1.3.1.3.3, Page 3-83)

**First paragraph, last sentence.** Change “...Utah Division of Wildlife Resources or ADFG.” to “...UDWLR or AGFD.”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 229:**

(Section 3.1.3.1.3.3, Page 3-83)

*Second paragraph, lines 1 and 4 (occurs in 2 places). Change “...Utah Division of Wildlife Resources or ADFG.” Change to “...UDWLR or AGFD.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 230:**

*(Section 3.1.3.1.3.3, Page 3-84)*

*First line on the page. Change “...Utah Division of Wildlife Resources or ADFG.” to “...UDWLR or AGFD.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 231:**

*(Section 3.1.3.1.3.4, Page 3-84)*

*Second paragraph. Add line spacing in between end of this paragraph and beginning of the third paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 232:**

*(Section 3.1.3.1.3.4, Page 3-84)*

*Fifth paragraph, first sentence. Change “...Utah Division of Wildlife Resources or ADFG.” to “...UDWLR or AGFD.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 233:**

*(Section 3.1.3.1.3.4, Page 3-84)*

*Seventh paragraph, first sentence. Change “...burrowing owl and kit fox...” Change to “...burrowing owls and kit foxes...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 234:**

*(Section 3.1.3.1.3.4, Page 3-85)*

*Second paragraph on page, last sentence. Change “...approval of...” to “...approval by...”*



**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 235:**

*(Section 3.1.3.1.3.4, Page 3-85)*

*Second paragraph on page, last sentence. Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 236:**

*(Section 3.1.3.1.3.5, Page 3-85)*

*First paragraph, second sentence. Change "...Management Plan..." to "...management plan..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 237:**

*(Section 3.1.3.1.3.5, Page 3-85)*

*First paragraph, last sentence. Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 238:**

*(Section 3.1.3.1.3.5, Page 3-85)*

*Second paragraph, first sentence. Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 239:**

*(Section 3.1.3.1.3.5, Page 3-85)*

*Third paragraph, first sentence. Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 240:**

*(Section 3.1.3.1.3.5, Page 3-85)*

**Third paragraph, fourth/fifth lines.** Change "...a seed mix with a higher concentration of plants preferred by pygmy rabbit would be used..." to "...a seed mix with a higher concentration of plants preferred by pygmy rabbit (as determined by the BLM or NPS authorizing officer) would be used..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 241:**

*(Section 3.1.3.1.3.6, Page 3-86)*

**First paragraph.** Add line spacing in between end of this paragraph and beginning of the second paragraph.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 242:**

*(Section 3.1.3.1.3.6, Page 3-86)*

**Third paragraph, first sentence.** Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 243:**

*(Section 3.1.3.1.3.7, Page 3-86)*

**First paragraph, second sentence.** "If temporary barbed wire or electric fencing is used to protect wildlife..." "Protect" from what? Is the purpose to keep wildlife out?

**UDWRe Response:**

**The purpose would be to keep wildlife out of areas where construction activity is occurring.**

**BLM Comment 244:**

*(Section 3.1.3.1.3.7, Page 3-86)*

**Second paragraph, first sentence.** Change "...ranchers and land permittees..." to "...ranchers and other land permittees..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 245:**

*(Section 3.1.3.1.3.7, Page 3-86)*

*Second paragraph, first sentence. Change "...big game and wild horses." to "...big game."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 246:**

*(Section 3.1.3.1.3.7, Page 3-86)*

*Second paragraph, second sentence. Change "...Utah Division of Wildlife Resources or ADFG." Change to "...UDWLR or AGFD."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 247:**

*(Section 3.1.3.1.3.7, Page 3-86)*

*Second paragraph, fourth sentence. Change "...Utah Division of Wildlife Resources or ADFG." to "...UDWLR or AGFD, and after appropriate site-specific environmental review and analysis has occurred."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 248:**

*(Section 3.1.3.1.3.7, Page 3-87)*

*First line on the page. Change "...utility corridor 500 feet..." to "...utility corridor, which extends 500 feet..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 249:**

*(Section 3.1.3.1.3.8, Page 3-87)*

*First paragraph, last sentence. Change "...Utah Division of Wildlife Resources." to "...UDWLR..."*

**UDWRe Response:**

**The correct acronym for Utah Division of Wildlife Resources is UDWR. This has been corrected throughout the text.**

**BLM Comment 250:**

*(Section 3.1.3.1.3.9, Page 3-87)*

***First paragraph, second sentence.*** Change "... U.S. EPA..." to "...EPA..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 251:**

*(Section 3.1.3.1.4, Page 3-88)*

***First paragraph.*** "Areas identified as having a high potential for buried paleontological resources based upon the field survey would be monitored by a qualified paleontologist during construction activities involving ground disturbance, including grading, excavation, and trenching." Add the following measure: Any paleontological resource (fossil remains of plants or animals) discovered along the route will immediately be reported to the appropriate federal land management agency. All operations in the immediate area of the discovery shall be suspended until written authorization to proceed is issued. An evaluation of the discovery shall be made by a qualified paleontologist to determine appropriate actions to prevent the loss of scientifically important paleontological values.

**UDWRe Response:**

**UDWRe recognizes the importance of preventing the loss of scientifically important paleontological resources but is resistant to the idea of suspending operations any time any paleontological resource is discovered. Since a qualified paleontologist will be monitoring construction activities in areas identified as having a high potential for buried paleontological resources, the paleontologist should be qualified to determine whether construction activities should be suspended and the discovery reported to federal land management agencies.**

**BLM Comment 252:**

*(Section 3.1.3.1.5, Page 3-88)*

*Add the following two measures: 1) Any cultural (historic/prehistoric site or object) resource discovered along the route will immediately be reported to the appropriate land management agency. All operations in the immediate area of the discovery shall be suspended until written authorization to proceed is issued. An evaluation of the discovery shall be made by a qualified archaeologist to determine appropriate actions to prevent the loss of significant cultural values. And 2) If in connection with this work any human remains, funerary objects, sacred objects, or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (Public Law 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, operations in the immediate area of the discovery will stop, the remains and objects will be protected, and the Arizona Strip Field Office Manager (or her designee) will be immediately notified. The immediate area of the discovery will be protected until notified by the Arizona Strip Field Office Manager (or her designee) that operations may resume.*

**UDWRe Response:**

UDWRe's view with regard to this comment is similar in nature to the viewpoint expressed in the response to BLM Comment 252. UDWRe's view is that the issues addressed in the comment will be addressed as part of the NHPA Section 106 process and subsequently introduced as proposed UBWR Environmental Protection Measures.

**BLM Comment 253:**

*(Section 3.1.3.1.6, Page 3-88)*

*"Land Use and Range Management" Why is "land use" in this section title? Isn't this section about range management? Or livestock management? There are a variety of land uses in the project area.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 254:**

*(Section 3.1.3.1.6, Page 3-88)*

*Rangeland Management. An ongoing livestock grazing operation is in effect and any livestock getting out or lost will need to be accounted for &/or liability can accrue.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 255:**

*(Section 3.1.3.1.6, Page 3-88)*

*First paragraph, first sentence. Change "...Section 14, T. 41 N., R. 8 E...." Change to "...Section 14, T. 41 N., R. 8 E...."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 256:**

*(Section 3.1.3.1.6, Page 3-88)*

*Fifth paragraph, first sentence. Change "...access is restricted..." Change to "...access is restricted, and after appropriate site-specific environmental review and analysis have occurred..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 257:**

(Section 3.1.3.1.7, Page 3-89)

*“Where campgrounds are located within 0.5 mile of the project, signage would be posted indicating the construction schedule.” Suggest this distance be extended. For example, White House Campground is located more than a mile down a road off HWY 89 with only one access. The distance from the project isn’t as important as where the access to the facilities are and how the project impacts that access. Note should also be edited to include “recreation sites and facilities”. It’s not just campground users that would be impacted by this project.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 258:**

(Section 3.1.3.1.7, Page 3-89)

***Third paragraph, last sentence.** Change “Where campgrounds are located within 0.5 mile of the project, signage would be posted indicating the construction schedule.” to “Where campgrounds are located within 0.5 mile of the project, signage would be posted indicating the construction schedule, and construction would occur during daytime hours to avoid disturbance to campground users.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 259:**

(Section 3.1.3.1.8, Page 3-89)

***First paragraph, 7th bullet.** “Limiting vehicle speeds on the work site” Limiting the speeds to what?*

**UDWRe Response:**

**Speeds would be limited such that dust generation is minimized. As stated in the text, the specific speed limit could vary depending on soil type, specific construction activity, or construction phase.**

**BLM Comment 260:**

(Section 3.1.3.1.8, Page 3-89)

***Second paragraph, second sentence.** Change “...as-need be...” to “...as-needed...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 261:**

(Section 3.1.3.1.9, Page 3-90)



*First paragraph, last sentence. Change “Architectural details would be approved as part of local building permit approvals.” Change to “Architectural details would be approved by the appropriate BLM authorizing officer and as part of local building permit approvals”*

**UDWRe Response:**

**The following text was added to the end of the sentence:**

**“VRM regulations would be followed as applicable.”**

**BLM Comment 262:**

*(Section 3.1.3.1.9, Page 3-90)*

*First paragraph, last sentence. Change “Architectural details would be approved as part of local building permit approvals.” How is this applicable on federal land? (It is not.)*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 263:**

*(Section 3.1.3.1.9, Page 3-91)*

*1st line on page. Delete “endemic vegetation” and insert “identified by the appropriate BLM or NPS authorized officer” after the word “species”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 264:**

*(Section 3.1.3.1.10, Page 3-91)*

*Underline: Trailhead Access During Construction:*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 265:**

*(Section 3.1.3.1.10, Page 3-91)*

*Underline: Recreation Site Access During Construction:*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 266:**

*(Section 3.1.3.1.10, Page 3-91)*

Underline: Sand Mountain Special Recreation Management Area (SRMA) impact mitigation:

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 267:**

*(Section 3.1.3.2.1.1, Page 3-93)*

*The text says “UDWR may make a written request to the BLM for a site-specific variance, and BLM would respond to UDWR’s request for a variance within five business days. Changes may require additional clearances and environmental compliance to be completed, and would be authorized by BLM’s Authorized Officer.” The five business day response time may be unreasonable if additional clearances and environmental compliance are indeed necessary. In addition, the “would be authorized by BLM’s Authorized Officer” language seems pre-decisional and biased since it is assumed that the AO would have discretion to approve, approve with conditions, or deny the requested variance. How would any such requested and/or approved variances be documented and would there be any appeal opportunities if a stakeholder objects to the approval of a variance or if the AO denies the UDWR requested variance?*

**UDWRe Response:**

**These sentences have been deleted. The construction plan will comply with BLM’s applicable guidance as set forth in statute, regulation, manual and other guidance.**

**The phrase “within five business days” will be deleted.**

**BLM Comment 268:**

*(Section 3.1.3.2.1.1, Page 3-93)*

***Second paragraph, last line.** “... BLM would respond to UDWR’s request for a variance within five business days.” “Changes may require additional clearances and environmental compliance to be completed, and would be authorized by BLM’s Authorized Officer.” Please note that this would likely take longer than the 5 day response time identified above.*

**UDWRe Response:**

**Your comment has been noted, and the clarification will be added.**

**BLM Comment 269:**

*(Section 3.1.3.2.1.3, Page 3-93)*

***First paragraph, second sentence.** Replace the word “accord” with “accordance”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 270:**

*(Section 3.1.3.2.1.4, Page 3-93)*

*First paragraph, first sentence. Replace “Grand Staircase-Escalante Field Office” with “Grand Staircase-Escalante National Monument”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 271:**

*(Section 3.1.3.2.1.4, Page 3-93)*

*First paragraph, last line. Delete the word “field”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 272:**

*(Section 3.1.3.2.1.5, Page 3-94)*

*6th bullet. Replace “Desert tortoise Habitat Conservation Plan (HCP)” with “Desert tortoise HCP”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 273:**

*(Section 3.1.3.2.1.5, Page 3-94)*

*10th bullet. Add “and is done by qualified personnel” after the word plan at the end of the sentence.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 274:**

*(Section 3.1.3.2.2.2, Page 3-94)*

*Second sentence. Delete “ROW” after BLM and NPS*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 275:**

*(Section 3.1.3.2.3.2, Page 3-95)*

*First paragraph, third sentence. Replace “instead fencing” with “instead of fencing”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 276:**

*(Section 3.1.3.2.3.3, Page 3-95)*

*Second sentence. Replace “Utah Division of Wildlife Resources, ADFG” with “UDWLR, AGFD”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 277:**

*(Section 3.1.3.2.4.4, Page 3-96)*

*“Boulders greater than 18 inches in diameter found on the soil surface would be moved to the edge of the ROW.” Need to be sure they are placed in a random manner, to mimic the natural landscape (and not impact visuals).*

**UDWRe Response:**

**The activities described in the text are for the clearing operations prior to construction. The boulders moved to the edge of the ROW would be placed there temporarily and then relocated to random locations within the ROW as part of surface restoration activities.**

**BLM Comment 278:**

*(Section 3.1.3.2.4.6, Page 3-96)*

*Since BLM usually provides a seed mix for re-vegetation, this text phrase does not seem to make sense in this context “2) would not include any species specifically identified by the BLM or NPS, ...”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 279:**

*(Section 3.1.3.2.4.6, Page 3-96)*

*“2) would not include any species specifically identified by the BLM or NPS, and” This sentence is worded incorrectly.*

**UDWRe Response:**

**Refer to the response to BLM Comment 278.**

**BLM Comment 280:**

*(Section 3.1.3.2.4.6, Page 3-96)*

*Section in the bottom should read certified weed free, not certified free.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 281:**

*(Section 3.1.3.2.4.7, Page 3-96)*

*Also mention that every year an effort must be made to resurvey or inventory those previous infestations and any new weeds or sprouts would be sprayed or controlled before seed stage.*

**UDWRe Response:**

**The areas will be treated and/or monitored in accordance with a BLM- or NPS-approved Integrated Weed Management Plan.**

**BLM Comment 282:**

*(Section 3.1.3.2.5.2, Page 3-97)*

*First paragraph, last sentence. "... wild horses"? Do not think there are any in the project area, so please consider deleting this.*

**UDWRe Response:**

**The text was not revised.**

**BLM Comment 283:**

*(Section 3.1.3.2.5.10, Page 3-98)*

*2nd line: Insert " , as determined by the BLM, NPS, or other land managing agency or land owner" after "conditions or better".*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 284:**

*(Section 3.1.3.2.6.2, Page 3-98)*

*Insert blank line between Sections 3.1.3.2.6.2 and 3.1.3.2.6.3.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 285:**

*(Section 3.1.3.2.6.4, Page 3-98)*

**3rd line:** “wild horses”? Do not think there are any in the project area, so please consider deleting this.

**7th line:** Insert “and” before “prior”

**UDWRe Response:**

The suggested edit from the second paragraph of the above comment has been incorporated.

**BLM Comment 286:**

(Section 3.1.3.2.6.8, Page 3-99)

**First sentence.** “... would be reported” Reported to whom?

**UDWRe Response:**

The Comprehensive Environmental Response, Compensation, and Liability Act specifies who is to receive such reports.

**BLM Comment 287:**

(Section 3.1.3.2.6.9, Page 3-99)

Please note that all activities discussed in this paragraph should occur within the approved ROW area.

**UDWRe Response:**

Your comment is noted.

**BLM Comment 288:**

(Section 3.1.3.2.6.10, Page 3-99)

**First paragraph, 1st line.** What is a “construction ROW”? This should be part of the single ROW that the BLM would issue, but would be the “temporary construction area”. Please clarify this so that it doesn’t appear as though BLM would be issuing two ROWs (which BLM would not do).

**UDWRe Response:**

The word “construction” has been replaced with “project”.

**BLM Comment 289:**

(Section 3.1.3.2.6.11, Page 3-99)

**Last line.** “...as they relate to the authorized ROW. It is unclear what this means since there wouldn’t be any “unauthorized ROW”.

**UDWRe Response:**



**The word “authorized” has been replaced with “other”.**

**BLM Comment 290:**

*(Section 3.1.3.2.6.12, Page 3-99)*

*Second sentence. Add “and minimize impacts to wildlife” after the word “properties”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 291:**

*(Section 3.1.3.2.6.12, Page 3-99)*

*Last sentence. “Blast noise monitoring would be conducted if blasting would be in the vicinity of occupied properties or sensitive public uses such as campgrounds or visitor facilities.” Should also be done if blasting would occur near wildlife breeding areas.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 292:**

*(Section 3.1.3.2.7.6, Page 3-100)*

*Insert line space above for the new paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 293:**

*(Section 3.1.3.2.7.8, Page 3-101)*

*First sentence. Replace the word “jurisdictional” with “these”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 294:**

*(Section 3.1.3.2.7.8, Page 3-101)*

*First sentence. “10 feet above the ordinary high-water mark” Cannot always determine this in ephemeral washes.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 295:**

*(Section 3.1.3.2.7.8, Page 3-101)*

*Second sentence. Replace “within project” with “within the project”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 296:**

*(Section 3.1.3.2.7.9, Page 3-101)*

*3rd line. Replace “high-water mark of jurisdictional drainages” with “(perennial, intermittent and ephemeral)”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 297:**

*(Section 3.1.3.2.7.10, Page 3-101)*

*Second sentence. Need to describe the “minor earthwork impoundments”.*

**UDWRe Response:**

**The text have been revised to address the comment.**

**BLM Comment 298:**

*(Section 3.1.3.2.7.10, Page 3-101)*

*Last sentence. “Water used for vehicle washing and similar purposes would be contained within designated areas using berms and allowed to percolate into the ground surface.” No. This should be contained and hauled away, and not allowed to soak into the ground.*

**UDWRe Response:**

**Water from contaminated sources would be collected and properly disposed of, but other waters would be allowed to soak into the ground.**

**BLM Comment 299:**

*(Section 3.1.3.2.7.11, Page 3-101)*

*First sentence. Replace “Arizona Department of Environmental Quality (ADEQ)” with “ADEQ”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 300:**

(Section 3.1.3.2.7.13, Page 3-102)

***Fourth sentence.** “If the hydrostatic testing water is discharged into a water body with designated beneficial uses, the water quality standards to maintain those beneficial uses would be tested for. Should occur for all discharge water. (It could result in soil chemical changes).*

**UDWRe Response:**

**Permitting for the project would address potential requirements for hydrostatic testing.**

**BLM Comment 301:**

(Section 3.1.3.2.8.1, Page 3-102)

***Third line.** Replace “would be” with “would also be”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 302:**

(Section 3.1.3.2.8.1, Page 3-102)

***Second sentence.** “The portion of the plan pertaining to restoration in listed species habitat would be submitted to the USFWS for approval.” Keep in mind that BLM has the final word on the seed mix, even in listed species habitat (not USFWS).*

**UDWRe Response:**

**The comment has been noted.**

**BLM Comment 303:**

(Section 3.1.3.2.8.2, Page 3-102)

***Third sentence.** Add “or other vegetative conditions identified by the BLM or NPS.” after the word “conditions”.*

*Delete “, with the exception of pinyon-juniper habitat which has encroached on sagebrush habitat within some portions of the ROW. Soil data maps from the Natural Resources Conservation Service would be used, in consultation with BLM or NPS, to determine if ecological pinyon-juniper sites would be restored to sagebrush habitat.”*

*Pinyon Juniper (PJ) would be restored to a grassland habitat*

**UDWRe Response:**

**The suggested edits from the first and second paragraphs of the above comment have been incorporated.**

**BLM Comment 304:**

(Section 3.1.3.2.8.3, Page 3-102)

*1st bullet. (i.e., only these species of cholla between 1 foot and less than 3 feet tall would be salvaged) Why this size restriction?*

**UDWRe Response:**

**The size restriction is related to plant survivability.**

**BLM Comment 305:**

*(Section 3.1.3.2.8.3, Page 3-102)*

*5th bullet. “Any cacti or yucca that cannot be accessed safely due to steep slopes or very rocky areas” Then why would such steep slopes be “disturbed”?*

**UDWRe Response:**

**Generally such locations would not be disturbed during construction.**

**BLM Comment 306:**

*(Section 3.1.3.2.8.4, Page 3-102)*

*First sentence. Insert “(ACEC)” after “areas of critical environmental concern”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 307:**

*(Section 3.1.3.2.8.4, Page 3-102)*

*First sentence. Insert “(RMPs)” after “Resource Management Plans”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 308:**

*(Section 3.1.3.2.8.6, Page 3-103)*

*First sentence. “Plant salvage would occur only within the permanent ROW, as indicated in Restoration Plan.” Why not the temporary construction area? Seems like it would be more important to do plant salvage there.*

**UDWRe Response:**

**Refer to the response to BLM Comment 304.**

**BLM Comment 309:**

*(Section 3.1.3.2.8.7, Page 3-104)*

*First sentence. Change “Flora” to “flora”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 310:**

*(Section 3.1.3.2.8.11, Page 3-104)*

*Last sentence. Add “or NPS” after “BLM”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 311:**

*(Section 3.1.3.2.8.13, Page 3-104)*

*3rd line. Add “or NPS” after “BLM”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 312:**

*(Section 3.1.3.2.9.5, Page 3-105)*

*Add “All water and material at the vehicle washing stations would be contained and collected and hauled off site for disposal at an approved disposal site.” to the end of the paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 313:**

*(Section 3.1.3.2.9.6, Page 3-105)*

*2nd line. Add “or NPS” after “BLM”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 314:**

*(Section 3.1.3.2.9.6, Page 3-105)*

*Last sentence. “Cleaning areas would be monitored for growth of noxious weeds and treated accordingly.” Monitored by whom?*

**UDWRe Response:**

**The applicant and its qualified professionals.**

**BLM Comment 315:**

*(Section 3.1.3.2.9.7, Pages 3-105 and 3-106)*

**Fourth line.** Delete “in consultation with Native American tribes, if necessary” after the word “use”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 316:**

*(Section 3.1.3.2.9.7, Page 3-106)*

**Third sentence.** Add “or drainages (perennial, ephemeral or intermittent).” at the end of the sentence.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 317:**

*(Section 3.1.3.2.9.9, Page 3-106)*

**Last sentence.** Replace “tortoise, livestock, wild horses, or other wildlife” with “tortoise, other wildlife or livestock”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 318:**

*(Section 3.1.3.2.10.3, Page 3-107)*

**Noxious Weeds.** Restoration Monitoring would be more accurate to say 2,500,000 gallons rather than 5 million.

**UDWRe Response:**

**UDWRe considers 5,000,000 gallons to be the appropriate release volume to warrant agency notification.**

**BLM Comment 319:**

*(Section 3.1.3.2.10.4, Page 3-107)*

**First sentence.** The ROW and primary unpaved access routes used for facility inspections would be monitored for noxious weeds from the start of construction until termination of the ROW. Monitored by whom?



**UDWRe Response:**

**Refer to the response to BLM Comment 314.**

**BLM Comment 320:**

*(Section 3.1.3.2.10.4, Page 3-107)*

*Last sentence. Add citation for (BLM 2007) to the references.*

**UDWRe Response:**

**The reference has been added to the references cited section.**

**BLM Comment 321:**

*(Section 3.1.3.3, Page 3-108)*

*Comment: This is a very inadequate plan conformance section. BLM can provide the information that should be included in this section.*

**UDWRe Response:**

**UDWRe's view is that the text is adequate for the FERC Exhibit E document.**

**BLM Comment 322:**

*(Section 3.1.3.3, Page 3-108)*

*Heading. Change "Resource and Monument Management Plan Objectives Consistency Analysis" to "Resource and Monument Management Plan Conformance"*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 323:**

*(Section 3.1.3.3, Page 3-108)*

*First sentence. Change "have implemented" to "are managed by direction contained within"*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 324:**

*(Section 3.1.3.3, Page 3-108)*

*First paragraph, last sentence. Change: "...consistency with the BLM current approved resource management plans and the Monument Management Plan in the following subsections."*

*To: "...conformance with the BLM applicable resource management plans and the monument management plan, as discussed in the following subsections."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 325:**

*(Section 3.1.3.3.1, Page 3-108)*

**First sentence.** Change: “The current approved Resource Management Plan (RMP) was issued in 2008 (BLM, 2008a).”

To: “The Arizona Strip Field Office Resource Management Plan (RMP) was approved in 2008 (BLM 2008a).”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 326:**

*(Section 3.1.3.3.1, Page 3-108)*

**Comment:** Revise (to be consistent with our plan conformance sections). BLM can provide the information/format for this section.

**UDWRe Response:**

**Refer to the response to BLM Comment 321.**

**BLM Comment 327:**

*(Section 3.1.3.3.1, Page 3-108)*

*This text describes two possible inconsistencies with ASFO RMP conformance relating to ACEC and VRM decisions. How would these inconsistencies be resolved? Would the FERC EIS need to include an ASFO RMP plan amendment to address these inconsistencies?*

**UDWRe Response:**

**A plan amendment to the ASFO RMP will have to be prepared to resolve inconsistencies with RMP conformance relating to ACEC and VRM decisions. The FERC EIS should include the ASFO RMP plan amendment prepared by BLM as a cooperating agency.**

**BLM Comment 328:**

*(Section 3.1.3.3.1, Page 3-108)*

**Third sentence.** Change: “The LPP Project would be consistent with the RMP objectives, except for the following: ...”

To: “The LPP Project would be in conformance with these RMP decisions. However, the proposed LLP Project is not in conformance with the following decisions...”

**BLM will provide the information for this section (ran out of time to provide it here).**

**UDWRe Response:**

**The comment has been noted.**

**BLM Comment 329:**

*(Section 3.1.3.3.1, Page 3-108)*

*11th line. Change “SW” to “southwestern willow”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 330:**

*(Section 3.1.3.3.1, Page 3-108)*

*12th line. Change to “SE Corner Alternative” (not “South alignment alternative”).*

**UDWRe Response:**

**The text has been revised to include both alignments.**

**BLM Comment 331:**

*(Section 3.1.3.3.1, Page 3-108)*

*First paragraph, 13th line. Replace “extends into” with “occur within”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 332:**

*(Section 3.1.3.3.1, Page 3-108)*

*First paragraph, 13th line. “...the Class 2 area (retention)...” This should be “avoidance area” (not “retention”). Expand on this subject (about the ACEC being an avoidance area).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 333:**

*(Section 3.1.3.3.1, Page 3-108)*

*Comment concerning the last sentence. Please clarify what this sentence is trying to say ... it’s confusing and convolute.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 334:**

(Section 3.1.3.3.1, Page 3-108)

*First sentence. Change: “The current approved Resource Management Plan was issued in 2008 (BLM, 2008b).”*

*to: “The Kanab Field Office Resource Management Plan was approved in 2008 (BLM 2008b).”*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 335:**

(Section 3.1.3.3.2, Page 3-108)

*Last sentence. Change “...consistent with the...” to “...conformance with these...”*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 336:**

(Section 3.1.3.3.3, Page 3-108)

*First sentence. Change: “The current approved Resource Management Plan was issued in 1999 (BLM, 1999).”*

*To: “The St. George Field Office Resource Management Plan was approved in 1999 (BLM 1999).”*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 337:**

(Section 3.1.3.3.3, Page 3-108)

*Fourth sentence. Closing quotation mark is missing.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 338:**

(Section 3.1.3.3.3, Page 3-108)

*Fifth sentence. Delete comma from “(Boyle Engineering Corp./Alpha Engineering Inc., 1995)” citation.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 339:**

*(Section 3.1.3.3.3, Page 3-109)*

*Seventh sentence.* Delete comma from “(Washington County Water Conservancy District, 1995)” citation.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 340:**

*(Section 3.1.3.3.3, Page 3-109)*

*Seventh sentence.* Delete comma from “(Ron Thompson, personal communication, 1997)” citation.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 341:**

*(Section 3.1.3.3.3, Page 3-108)*

*Ninth sentence.* Change: “The proposed LPP Project would be consistent with the RMP objectives, except for the following: ...”

*To:* “The proposed LPP Project would be in conformance with these RMP objectives. However, the proposed LLP Project is not in conformance with the following decisions: ...”

**UDWRe Response:**

**The comment has been noted.**

**BLM Comment 342:**

*(Section 3.1.3.3.3, Page 3-109)*

*Twelfth sentence.* “...an existing road crossing through the Frog Hollow through...” the Frog Hollow what?

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 343:**

*(Section 3.1.3.3.4, Page 3-109)*

*First sentence. Change: “The current approved Monument Management Plan (MMP) was effective in 2000 (BLM, 2000).”*

*To: “The Monument Management Plan (MMP) was approved in 2000 (BLM, 2000).”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 344:**

*(Section 3.1.3.3.4, Page 3-109)*

*9th line. Change “through the GSENM” to “through GSENM”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 345:**

*(Section 3.1.3.3.4, Page 3-109)*

*Eighth sentence. Change “The LPP Project would be consistent with the MMP objectives, except for the following:”*

*To: “The LPP Project would not be in conformance with the following MMP objectives:”*

**UDWRe Response:**

**The comment has been noted.**

**BLM Comment 346:**

*(Section 3.1.3.3.4, Page 3-109)*

*Comment: Reformat so easier to read - split the text starting with “The LPP Project would ...” into a separate paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 347:**

*(Section 3.1.3.3.4, Page 3-110)*

*Comment: Need to explain here why the LPP project is not in conformance with the RMPs.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 348:**

*(Section 3.1.3.3.4, Page 3-110)*



*7th line on page. "... the Class 2 area (retention)..." Expand on this – should just refer to the VRM Class II areas as that ... Do not use the terminology "retention areas". Please delete "(retention)".*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 349:**

*(Section 3.1.3.3.4, Page 3-110)*

*23rd line on page. Change "...crossed by proposed..." to "... crossed by the proposed..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 350:**

*(Section 3.1.3.3.4, Page 3-110)*

*Second sentence. Delete comma from "(NPS, 2007)" citation.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 351:**

*(Section 3.1.3.3.4, Page 3-110)*

*General comment on this section: Needs more information.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 352:**

*(Section 3.2, Page 3-110)*

*The Pre-survey, preparation & field equip. & materials. Vegetation communities id & mapped during the 2009 season is probably outdated and would need to be updated.*

**UDWRe Response:**

**The characteristics of the vegetation communities are not expected to have materially changed since the time of the original survey and will be reviewed prior to construction.**

**BLM Comment 353:**

*(Section 3.2, Page 3-110)*

*Comment on the DESCRIPTION OF NO ACTION ALTERNATIVE section: Should be what would happen if the LLP is not approved, which seems to be the same as No Lake Powell Water Alternative.*

**UDWRe Response:**

The study plan approved by FERC requires that the studies include both a No Action Alternative and an action alternative to the Lake Powell Pipeline. See FERC Study Plan Determination. The No Action Alternative is the “baseline to establish environmental conditions for comparison with other alternatives.” Section 3.2, FERC Scoping Document 2. The action alternative to the LPP (No Lake Powell Pipeline Water Alternative) is to use a combination of water supply and management options that would serve the same population as the LPP. Refer to FERC Study Plan Determination. The application incorporates the No Action Alternative and No Lake Powell Pipeline Water Alternative as designated by FERC.

**BLM Comment 354:**

*(Section 3.2, Pages 3-110 and 3-111)*

*Third sentence. Delete “until water and other potential limiting resources such as developable land, electric power, and fuel begin to curtail economic activity and population in-migration”.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 355:**

*(Section 3.2.1, Page 3-111)*

*First paragraph, first sentence. “The WCWCD would implement other future water development projects currently planned by the District...” Such as? Need to describe that here.*

**UDWRe Response:**

Revisions have been made to Chapter 3 to describe future projects. Refer to Final Study Report 19 – Water Needs Assessment for a description of projects which are planned and will be implanted prior to both the Proposed Action and No Action Alternative.

**BLM Comment 356:**

*(Section 3.2.1, Page 3-111)*

*First paragraph, first sentence. “...and implement advanced treatment of Virgin River water.” Describe this “advanced treatment”.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 357:**

*(Section 3.2.1, Page 3-111)*

*First paragraph, third sentence. “Existing and future water supplies under the No Action Alternative would meet projected M&I water demand within the WCWCD service area through approximately 2028.” Provide a citation for this statement.*

**UDWRe Response:**

**A citation has been provided for the statement.**

**BLM Comment 358:**

*(Section 3.2.1, Page 3-111)*

*The text in this section may not be accurate in light of the Utah legislative audit findings that the WCWCD’s water data and future use projections may be unreliable. In addition, this text appears to conflict with a Western Resource Advocates report that found much greater potential for water conservation savings. How does this text reconcile these and other reports that may have reached different conclusions? What vetting process does FERC or the State use to determine that the water use data and future water use projections are objective and reasonably accurate?*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**The region benefiting most from the potential LPP already met the Governor’s 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**UDWRe and the participating entities will work closely with the Governor’s Office and State Legislature in order to ensure the financial framework to fund the LPP is reasonable from a state perspective and based on accurate data and information. These goals as well as other audit recommendations can be achieved concurrently with a NEPA/EIS process.**

**The water use and available water resources have been quantified with the best available information including the UDWRe’s Kanab Creek and Virgin River Basin Studies. The UDWRe will implement more frequent studies. The best and most recent data will be used at the time of application submittal.**

**The water conservation savings is presented in the No Action Alternative. Future water demand is based on population projections from the Utah Governor’s Office of Planning and Budget and also incorporating conservation achievements to date and goals moving forward in agreement with State of Utah and local district goals.**

**BLM Comment 359:**

(Section 3.2.1, Page 3-111)

*Critics have strongly challenged this WCWCD “No LPP Alternative” as being unnecessarily harsh, draconian, and unrealistic. They say that this alternative is skewed to make the other LPP construction alternatives look more feasible and attractive by comparison. They say that other cities in the Southwest have achieved much better water conservation and much lower per capita water use rates through less draconian means. For example, critics advocate for removing the property tax subsidy to the WCWCD, implementing tiered pricing of water, and providing financial incentives to homeowners to convert lawns into xeriscapes. Utah Governor Herbert’s recent budget water recommendations echo many of these same concerns. In addition, over twenty Utah university economics professors submitted a letter that, among other things, questioned the cost and financial feasibility of building the LPP and asserted that water conservation measures would be more feasible and less costly to meet the projected demand. How does FERC or BLM ensure that this “No LPP Alternative” is objective, feasible, and realistic in light of these strong and widespread criticisms?*

**UDWRe Response:**

**Please note that the comment references the section on the No Action Alternative, rather than the No LPP Water Alternative, but the substance of the comment is addressed here.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor’s 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Regional communities already implement tiered pricing. Water conservation will continue to be a high regional and state priority.**

**The No LPP Water alternative is representative of actions that would need to occur in the absence of the water developed from Lake Powell. In the event that water is not available through these options, other approaches will be required to avoid impacts on the local environment.**

**UDWRe and the participating entities will work closely with the Governor’s Office and State Legislature in order to ensure the financial framework to fund the LPP is reasonable from state and regional perspectives, in accordance with the Lake Powell Pipeline Development Act, and based on accurate data and information. These goals can be achieved concurrently with a NEPA/EIS process.**

**It is not true that eliminating property taxes would ensure that users would pay the full cost of their water use. Property taxes are used by WCWCD for general public benefits including endangered species programs, watershed protection efforts, water conservation programs, programs designed to proactively protect ground water resources from contamination, seed money for new project planning, including preliminary environmental analysis and efficiency reviews, grant programs to local water companies and municipalities in the service area. Some portion of property tax revenues supports facilities that provide recreational benefits.**

The assertion that eliminating property taxes would ensure that users would pay the full cost of their water use is inaccurate. Property taxes are used by WCWCD for general public benefits including endangered species programs, watershed protection efforts, water conservation programs, programs designed to proactively protect ground water resources from contamination, seed money for new project planning, including preliminary environmental analysis and efficiency reviews, grant programs to local water companies and municipalities in the service area. Some portion of property tax revenues supports facilities that provide recreational benefits.

The no LPP water alternative is representative of actions that would need to occur in the absence of the water developed from Lake Powell. In the event that water is not available through these options, other approaches will be required to avoid impacts on the local environment.

Refer to the responses to Gail Blattenberger's Comments in the General Comments section.

**BLM Comment 360:**

*(Section 3.3.1.1.1, Page 3-112)*

*Second paragraph, second sentence. Change "...land in the GSENM and by the Kanab Field Office, lands administered by Utah SITLA and Arizona Department of State Lands, private..."*

*To: "...land in GSENM and the Kanab Field Office, lands administered by SITLA and Arizona State Land Department private..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 361:**

*(Section 3.3.1.1.1, Page 3-112)*

*Second paragraph, second sentence. Change: "...U.S. 89 in..." To: "...U.S. 89 (a portion of which is in the Congressionally designated utility corridor) in..."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 362:**

*(Section 3.3.1.1.1, Page 3-112)*

*Second paragraph, ninth line. Delete the word "north".*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 363:**

(Figure 3-38, Page 3-113)

*The National Park/Monument and GSENM Boundary are hard to see on this map.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 364:**

*(Section 3.3)*

*Must include RATIONALE for why the “Highway Alternative” is included in the NEPA document. Must go into detail about the Kaibab Tribe’s Referendum for this, and detail of resource impacts, positive and negative, comparative to other Alternatives.*

**UDWRe Response:**

**FERC’s Scoping Document 2, issued in 2008, stated that several parties, including the Kaibab Tribe, requested that that the EIS consider a pipeline route across the Kaibab-Paiute Indian Reservation, and FERC required the EIS to do so. The Tribe’s ‘referendum’ is addressed to ethnographic resources, sensitive plants, and other study reports. Details of impacts are included in the appropriate study plan.**

**BLM Comment 365:**

*(Section 3.3.1.1.1, Page 3-114)*

*Third paragraph, second sentence. Change: “...BLM Arizona Strip Field Office and Arizona Department of State Lands, and private lands.”*

*To: “...BLM’s Arizona Strip Field Office and Arizona State Land Department and private lands.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 366:**

*(Section 3.3.1.1.1, Page 3-114)*

*Third paragraph, 5th line. Add a comma after “northwest”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 367:**

*(Section 3.3.1.1.1, Page 3-114)*

*First paragraph on page. UT and AZ should be written out (versus using the abbreviations) - this occurs multiple times in this paragraph.*



**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 368:**

*(Section 3.3.1.1.1, Page 3-114)*

*Second paragraph on page, 1st line. Add “ROW” after the word “construction”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 369:**

*(Table 3-11, Page 3-114)*

*Change “Arizona Department of State Lands” to “Arizona State Land Department”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 370:**

*(Table 3-11, Page 3-114)*

*Change “Utah SITLA” to “SITLA”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 371:**

*(Section 3.3.1.1.2, Page 3-116)*

*Last paragraph, 1st line. Add “ROW” after the word “construction”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 372:**

*(Section 3.3.1.1.3, Page 3-116)*

*First paragraph, second sentence. Change: “Permanent ROW would be 1,726.92 acres, construction ROW would be 479.23 acres, and total ROW would be 2,206.15 acres.”*

*To: Permanent ROW area would be 1,726.92 acres, construction ROW area would be 479.23 acres, and total ROW area would be 2,206.15 acres.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 373:**

*(Table 3-13, Page 3-118)*

*Change “Utah SITLA” to “SITLA”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 374:**

*(Section 3.3.1.2.1, Page 3-119)*

*Second paragraph, first sentence. Change “Section 3.1.1.3.1” to “Section 3.1.1.4.1”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 375:**

*(Section 3.3.1.2.1, Page 3-119)*

*Second paragraph, second sentence. “There would be no permanent security fencing...” Would there be temporary security fencing?*

**UDWRe Response:**

**The note regarding permanent security is meant to contrast to those facilities which would have permanent security fencing, e.g., pumping facilities, hydro stations, etc. Temporary ‘safety’ fencing would be utilized for some construction activities.**

**BLM Comment 376:**

*(Section 3.3.1.2.1.1, Page 3-120)*

*First paragraph, first sentence. Change “Section 3.1.1.3.1.1” to “Section 3.1.1.4.1.1”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 377:**

*(Section 3.3.1.3.1, Page 3-120)*

*5th line. “....involve on single-pole” Should that be changed to “involve one single-pole”?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 378:**

**First paragraph, first sentence.** Change “...alternative are shown in Table 3-15 by land ownership and management. Permanent ROW would be 286.50 acres, construction area ROW would be 62.44 acres, and total ROW would be 348.94 acres.”

*To: “The alternative is shown in Table 3-15 by land ownership and management. Permanent ROW area would be 286.50 acres, construction ROW area would be 62.44 acres, and total ROW area would be 348.94 acres.”*

**The suggested edit has been incorporated.**

(Table 3-15, Page 3-121)

*Change “Utah SITLA” to “SITLA”. Delete “Page 1 of 2”.*

**The suggested edit has been incorporated.**

(Table 3-15, Page 3-122)

*“...construction staging area” Need to show where this is on the LPP project maps.*

The APE maps in Appendix E have been revised to show the staging areas with a unique hatching as defined in the map legends.

(Section 3.4, Page 3-122)

*Proposed Action and Alternatives – description of the SE Alt: Needs to discuss land ownership for this as well as each Alternative. Must discuss the RATIONALE for why each Alternative is included in the NEPA document. Specific to the SE Alt: BLM originally advocated for an Alternative to stay within the existing BLM-designated Navajo-McCullough transmission corridor. This important point is not mentioned.*

**FERC's Scoping Document 2, issued in 2008, stated that several parties, including the Kaibab Tribe, requested that that the EIS consider a pipeline route across the Kaibab-Paiute Indian Reservation, and FERC required the EIS to do so.**

(Section 3.4.1, Page 3-122)

*At the end of the first paragraph add the sentence “Under this alternative, LPP Project features would be located within the BLM’s designated utility corridor and follow the Navajo-McCullough transmission line across the Kaibab Paiute Indian Reservation.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 383:**

*(Section 3.4.1.1, Page 3-123)*

***Last sentence in section.** At the end of the sentence add “so that it does not deviate from the Navajo-McCullough transmission line corridor.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 384:**

*(Section 3.4.1.1.1, Page 3-123)*

***Second paragraph, second sentence.** Change: “This penstock segment would cross BLM-administered land in the GSENM and by the Arizona Strip Field Office, Arizona Department of State Lands, and private lands.”*

*To: “This penstock segment would cross BLM-administered land in GSENM and the Arizona Strip Field Office, Arizona State Lands Department and private lands.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 385:**

*(Section 3.4.1.1.1, Page 3-123)*

***Second paragraph, second sentence.** Delete the line spacing in the middle of the sentence so it does not appear like a new paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 386:**

*(Section 3.4.1.1.1, Page 3-123)*

***Third paragraph, second sentence.** ” There would be no permanent security fencing...” Would there be temporary security fencing?*

**UDWRe Response:**

**Refer to the response to BLM Comment 375.**

**BLM Comment 387:**

*(Table 3-16, Page 3-125)*

*Change title of table from: “Penstock Segment Length, Permanent ROW, Construction Area ROW, and Total ROW”*

*To: “Penstock Segment Length, Permanent ROW Area, Construction ROW Area, and Total ROW Area”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 388:**

*(Table 3-16, Page 3-125)*

*Change “Arizona Department of State Lands” To: “Arizona State Land Department”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 389:**

*(Table 3-16, Page 3-125)*

*Change “Utah SITLA” to “SITLA”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 390:**

*(Table 3-16, Page 3-125)*

*Notes: Change “SITLA = School and Institutional Trust Lands Administration”*

*To: “SITLA = Utah School Institutional Trust Lands Administration”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 391:**

*(Table 3-16, Page 3-125)*

*Notes: <sup>a</sup> Includes 43.56 acres for three construction staging areas on public land administered by the BLM-Arizona Strip F.O. Need to show where these would be*

**UDWRe Response:**

**Staging areas are shown on the maps in Appendix E with a unique hatching as defined in the map legends.**

**BLM Comment 392:**

*(Table 3-16, Page 3-125)*

*Notes: <sup>a</sup> Includes 43.56 acres for three construction staging areas on public land administered by the BLM-Arizona Strip F.O. Delete the hyphen between BLM and Arizona*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 393:**

*(Section 3.4.1.1.2, Page 3-126)*

*Second sentence. Change “Permanent ROW would be 1,787.35 acres, construction ROW would be 544.12 acres, and total ROW would be 2,331.47 acres.”*

*To: “Permanent ROW area would be 1,787.35 acres, construction ROW area would be 544.12 acres, and total ROW area would be 2,331.47 acres.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 394:**

*(Table 3-17, Page 3-126)*

*Table 3-17, page 1 of 2. Change “Utah SITLA” to “SITLA”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 395:**

*(Table 3-17, Page 3-127)*

*Table 3-16, page 2 of 2, under Notes: Change “SITLA = School Institutional Trust Lands Administration”*

*To: “SITLA = Utah School Institutional Trust Lands Administration”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 396:**

(Table 3.17, Page 3-127)

**Table 3-16, page 2 of 2, under Notes:** <sup>a</sup> Includes 43.56 acres for three construction staging areas on public land administered by the BLM Arizona Strip F.O. Need to show where these would be.

**UDWRe Response:**

**Staging areas are shown on the APE maps in Appendix E. The staging areas have a unique hatching as defined in the map legends.**

**BLM Comment 397:**

(Section 3.5, Page 3-127)

*Critics have strongly challenged this WCWCD “No LPP Alternative” as being unnecessarily harsh, draconian, and unrealistic. They say that this alternative is skewed to make the other LPP construction alternatives look more feasible and attractive by comparison. They say that other cities in the Southwest have achieved much better water conservation and much lower per capita water use rates through less draconian means. For example, critics advocate for removing the property tax subsidy to the WCWCD, implementing tiered pricing of water, and providing financial incentives to homeowners to convert lawns into xeriscapes. Utah Governor Herbert’s recent budget water recommendations echo many of these same concerns. In addition, over twenty Utah university economics professors submitted a letter that, among other things, questioned the cost and financial feasibility of building the LPP and asserted that water conservation measures would be more feasible and less costly to meet the projected demand. How does FERC or BLM ensure that this “No LPP Alternative” is objective, feasible, and realistic in light of these strong and widespread criticisms?*

**UDWRe Response:**

**Refer to response to BLM Comment 359.**

**BLM Comment 398:**

(Section 3.5, Page 3-127)

**Comment.** *Explain why the DESCRIPTION OF NO LAKE POWELL WATER ALTERNATIVE is different from the “No Action”? They should be the same thing. “No Action” represents what would happen if no Lake Powell Pipeline water would be conveyed to Kane County and Washington County (which is exactly what the No Lake Powell Water Alternative is).*

**UDWRe Response:**

**Refer to the response to BLM Comment 353 and Sections 3.2 and 3.5 in Chapter 3 of Exhibit E.**

**BLM Comment 399:**

(Section 3.5, Page 3-127)

**Last sentence.** *Remove the hyphen from “un-allocated”*



**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 400:**

*(Section 3.5.1.2, Page 3-128)*

**Fourth sentence.** “The combined RO product water and residential outdoor potable water use re-purposed to indoor potable use would equal 82,249 acre-feet per year of M&I water to meet Washington County’s potable indoor water demands through 2052.”

**Contradicts section 3.5.1.2.1, fifth sentence.** “Gradually eliminating residential outdoor potable water use starting in 2025 would provide the growing population with potable water for indoor use through 2045...”

**UDWRe Response:**

**The text has been revised to resolve the contradiction.**

**BLM Comment 401:**

*(Section 3.5.1.2.1, Page 3-128)*

**Fifth sentence.** Add “as described in section 3.5.1.2.2.” at the end of the sentence.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 402:**

*(Section 3.5.1.2, Page 3-129)*

**First paragraph, second sentence.** Change “total dissolved solids (TDS)” to “TDS” (acronym has already been defined).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 403:**

*(Section 3.5.1.2.2, Page 3-130)*

**Partial paragraph at top of page, last sentence.** “...requiring a 6.3-mile long 69-kV power transmission line from the Dixie Springs Substation. Show the location of this on a map.

**UDWRe Response:**

**The facility would now require a 2.8 mile long transmission line from the Purgatory Substation. The text has been revised to reflect the change. Figure 3-45 has been added to Chapter 3 which shows the transmission line.**

**BLM Comment 404:**

(Section 3.5.1.2.2, Page 3-130)

**Third paragraph.** Show the facilities described in this paragraph on a map.

**UDWRe Response:**

**Figure 3-45 has been added to Chapter 3 which shows the facilities mentioned in the text.**

**BLM Comment 405:**

(Section 3.5.1.2.3, Page 3-130)

**First paragraph, 19th line.** Change “Utah Division of Water Resources (UDWRe)” to UDWR.

**UDWRe Response:**

**Utah also has a Division of Wildlife Resources, which uses the acronym UDWR. The acronym UDWRe will be used consistently throughout the document.**

**BLM Comment 406:**

(Section 3.5.1.2.4, Page 3-132)

**Describe the pump station and pipeline in more detail and show on a map.**

**UDWRe Response:**

**The text has been revised to address the comment. Refer to Figure 3-45.**

**BLM Comment 407:**

(Section 3.5.2, Page 3-132)

**Fifth sentence.** “The developed groundwater from the Kanab Creek drainage basin would be pumped and conveyed through an eight-mile long pipeline to the Johnson Canyon drainage basin.” Show on a map.

**UDWRe Response:**

**The exact alignment of the pipeline between drainage basins has not been determined. The eight-mile length of the pipeline is a general estimate based on the distance between basins. Therefore, the pipeline cannot be shown on a map.**

**NPS Comment 1:**

**General Comment:**

*NPS retains all wildlife management responsibilities on park lands.*

**UDWRe Response:**

**Your comment is noted.**

**NPS Comment 2:**

(Section 3.1.1.2.1, Pages 3-8 to 3-13)

**Second paragraph:** *How deep will the water conveyance be buried, especially when crossing dry washes, intermittent streams, and canyons in GLCA?*

**UDWRe Response:**

**The pipeline would have a minimum depth of cover over the top of the pipeline of 3 feet.**

**The depth under dry washes, intermittent streams and canyons would likely be deeper to prevent against scour and to maintain a more constant grade to minimize the number of pipeline drains and air vacuum releases.**

**NPS Comment 3:**

(Section 3.1.1.2.2, Page 3-16)

**Second paragraph:** *The "BOR Administered Lands" and BPS-1 are within GLCA and NPS Integrated Pest Management Policies apply. Required are annual pre-approval and reporting for pesticides (as defined by FIFRA) as well as meeting storage requirements and limits. Purchase, storage, and use of the biological molluscicide must meet these requirements.*

**UDWRe Response:**

**Pipeline invasive species control measures, including chemicals, would be finalized during the detailed design phase of the project. The use of pesticides would be in accordance with NPS policies.**

**NPS Comment 4:**

(Section 3.1.3.1.3.7, Page 3-86)

*Wild horses are considered trespass animals in GLCA*

**UDWRe Response:**

**Your comment is noted.**

**NPS Comment 5:**

(Section 3.1.3.1.4, Page 3-87)

*And applicable NPS policies and law*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 6:**

(Section 3.1.3.1.9, Page 3-90)

*Use NPS night sky standards inside GLCA*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 7:**

*(Section 3.1.3.2.7.2, Page 3-101)*

**Third paragraph:** *The NPS would appreciate an opportunity to review the Hydrostatic Discharge Plan*

**UDWRe Response:**

**The comment has been noted.**

**NPS Comment 8:**

*(Section ~~3.1.3.2.9.7~~ 3.1.3.2.9.7<sup>MWH</sup>, Page 3-105)*

*Also submit PUP's to NPS, not just to BLM*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 9:**

*(Section 3.1.3.4, Page 3-110) Also GLCA GMP 1979; other relevant planning documents*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 1:**

*(Section 3.1.3.1.3, Page 3-79)*

**Biological Resources:** *We recommend that you commit that Project alignments and facilities would be sited and aligned to avoid or minimize impacts to federally listed species and designated critical habitats, federal agency sensitive species, and state listed or sensitive species. We also recommend citing the regulations and your commitment to comply with the ESA.*

*We recommend that you incorporate the following sentence into the survey guidance of this section: Botanical surveys for federally listed plants must be conducted by qualified individual(s) and according to USFWS accepted survey protocols (USFWS 2011).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 2:**

*(Section 3.1.3.1.3, Page 3-80)*

**Special Status Plants:** We recommend that you modify the first sentence in this section (adding the underlined text): "In areas where sensitive plant species (including federally listed plant species, their suitable habitat or designated critical habitat), were identified in previous surveys either within or adjacent to the ROW, or in areas that may be indirectly impacted by the project, pre-construction surveys would be conducted during the blooming or fruiting season as needed to verify plant identification."

**UDWRe Response:**

The text has been revised to address the first underlined suggested edit.

**USFWS Comment 3:**

(Section 3.1.3.1.3, Page 3-80)

**Special Status Plants:** We recommend that you include the federally listed plants that have the potential to occur in the project area and areas that may be directly or indirectly impacted by the project. These plants include:

- *Arctomecon humilis* (Dwarf bear-poppy)
- *Asclepias welshii* (Welsh's milkweed) and designated critical habitat
- *Astragalus ampul/ arioides* (Shivwits milkvetch) and designated critical habitat
- *Astragalus holmgreniorum* (Holmgren's milkvetch) and designated critical habitat
- *Carex specuicola* (Navajo sedge)
- *Cycladenia humilis var. jonesii* (Jones cycladenia)
- *Lesquerella tumulosa* (Kodachrome bladderpod)
- *Pediocactus sileri* (Siler pincushion cactus)
- *Sp haera/cea .aierischii* (Gierisch globemallow)

**UDWRe Response:**

Refer to the response to USFWS Comment 1 in the General Comments section.

**USFWS Comment 4:**

(Section 3.1.3.1.3, Page 3-80)

**Special Status Plants:** There is no mention of federally listed plant species in this section. We recommend that you add the following sentence in this section: "Environmental measures for federally listed plant species will be developed in consultation with the USFWS."

**UDWRe Response:**

UDWRe will develop environmental measures as proscribed by applicable laws, regulations, and guidance documents.

**USFWS Comment 5:**

(Section 3.1.3.2.2.4, Page 3-95)

**Surveying:** We recommend that you modify the sentence (adding the underlined text): "If exclusion zones within the right-of-way (ROW) are required by the BLM or National Park Service (NPS) or identified in the biological opinion for resource protection (e.g., biological or cultural resources, protected plants, nesting birds) those areas would be staked, flagged, or fenced, and

*signed prior to construction to ensure avoidance during construction, and if necessary during operation and maintenance."*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 6:**

*(Section 3.1.3.2.8.2, Page 3-103)*

**Restoration:** *We recommend that you add the following additional sentences at the end of this section:*

*"The Restoration Plan will be approved by federal land management agencies prior to implementation. Monitoring will be performed following salvage and restoration activities to evaluate their success. Monitoring of salvaged plants will be performed for a minimum of 5 years, as identified in federal management agency resource guidance documents, or the biological opinion, as appropriate. In order to ensure impacts to vegetation communities are short-term, additional restoration efforts may be necessary if establishment criteria are not met."*

**UDWRe Response:**

**The comment has been used as a starting point to revise the text.**

**USFWS Comment 7:**

*(Section 3.1.3.2.8.3, Page 3-103)*

**Restoration:** *We recommend that you include an additional bullet in this section with the following language:*

- Federally threatened *Pediocactus sileri* will be handled per the instructions and restrictions developed in consultation with the USFWS.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 8:**

*(Section 3.1.3.2.8.4, Page 3-103)*

**Restoration:** *We recommend that you add the following sentence at the end of this section:*

*"Any additional measures identified in the biological opinion will be implemented for desert tortoise and Shivwits milkvetch designated critical habitat."*

**UDWRe Response:**

**No Shivwits milkvetch critical habitat will be impacted by the proposed action or alternatives.  
Refer to the response to USFWS Comment 1 in the General Comments section.**

**The report will be modified to state that any reasonable measures identified in the biological opinion will be implemented for desert tortoise on federally-owned land.**

**USFWS Comment 9:**

*(Section 3.1.3.2.9.8, Page 3-106)*

**Noxious Weeds:** *We recommend that you modify the sentence (adding the underlined text): "Removal of noxious and invasive weeds in these areas would be accomplished by alternative method(s) approved by the BLM or NPS, or that are identified in the biological opinion."*

**UDWRe Response:**

**The text has been revised to address the comment.**

**LPP Coalition Comment 1:**

*(Section 3.5)*

**No Lake Powell Water Alternative**

*The PLP describes the No LPP Alternative as follows:*

*"The No Lake Powell Water Alternative would involve a combination of developing remaining available surface water and groundwater supplies, developing reverse osmosis treatment of existing low-quality water supplies, and eliminating residential outdoor potable water use as a conservation measure in the (Washington County Water Conservancy District) WCWCD service area. This alternative could provide a total of 86,249 acre-feet of water annually to WCWCD and KCWCD for (Municipal and Industrial) M&I use without diverting Utah's un-allocated water rights from Lake Powell." <sup>3</sup>*

*UBWR continues to make a major error in its description of the No LPP Alternative. Therefore, the analysis throughout the PLP is erroneous. If the Project was not built, there would be no need to eliminate residential outdoor water use because UBWR only uses 17,219 AF of culinary water in the No LPP Alternative. Therefore, outdoor potable water use is not eliminated. We discuss this error in detail in our comments on Study Report No. 22 below.*

*Also, the Study Report does not identify all the remaining existing water supplies. There are still abundant existing water supplies not identified by UBWR that could be developed if the Project was not built. We discuss available water supplies below in our comments in Study Report No. 19 Water Needs Assessment.*

<sup>3</sup> PLP, p. 3-127, (emphasis added)

**UDWRe Response:**

**Refer to Section 3.5 for a revised discussion of the No Lake Powell Water Alternative.**

**LPP Coalition Comment 2: Background**

*(Section 3.5.1.1)*



## **Background**

*The PLP states:*

*“These future water supplies are all part of the 72,362 acre-feet per year that would be developed by 2025. The same amount of water comprises the 2052 potable water supply, indicating Washington County would have no new water supplies after 2025”.*<sup>4</sup>

*The information the Coalition provided in our comments does not demonstrate that the County will run out of water by 2025 in the No LPP Alternative. As discussed in our detailed comments on Study Report No. 19, Water Needs Assessment below. If the water use and water supplies were validated as the State Auditor General recommended there is ample water for growth under the No LPP Alternative.*

<sup>4</sup> PLP, p. 3-128, (emphasis added)

### **UDWRe Response:**

**Your comment has been noted.**

### **LPP Coalition Comment 3:**

*(Section 3.5.1.2)*

#### **WCWCD No Lake Powell Water Alternative Features**

*The PLP describes the impacts of the No LPP Alternative on Washington County as follows:*

*“[b]eginning in 2025, Washington County residential outdoor potable water use would be permanently re-purposed to indoor potable water use to help meet increasing indoor potable water demands.”*<sup>5</sup>

*UBWR makes the same error in its conclusion that outdoor potable water use would be eliminated under the No LPP Alternative. It is not supported by evidence in the record. This alternative only requires 17,219 (AF) of culinary water and the County will have 98,727 (AF) of water by 2060. As explained in our comments on Study Report No. 22 Water Needs Assessment below, outdoor watering of potable water would continue under the No LPP Alternative.*

<sup>5</sup> PLP, p. 3-128, (emphasis added)

### **UDWRe Response:**

**Refer to Section 3.5 for a revised discussion of the No Lake Powell Water Alternative.**

### **LPP Coalition Comment 4:**

*(Section 3.5.1.2.1, Page 3-128)*

#### **Re-Purposing Potable Water Use**

*The PLP claims that the No LPP Alternative would drastically alter outdoor use of potable water:*

*“The No Lake Powell Water Alternative would permanently eliminate residential outdoor potable water use in Washington County, re-purposing the portion of potable water used for residential outdoor watering to indoor potable use. Projections of future water use through 2060 account for population growth, climate change (projected 6 percent reduction of Virgin River flows by 2050), water conservation (35 percent reduction in per capita water use from 2000 to 2060), and a water planning reserve (10 percent) to avoid utilizing all available water supplies in meeting demands. Potable water in Washington County is consumed for residential indoor and outdoor uses, commercial uses, institutional uses, and industrial uses. These potable water uses would total 130,245 acre-feet per year by 2052, which would be equal to the potable water demand. Gradually eliminating residential outdoor potable water use starting in 2025 would provide the growing population with potable water for indoor use through 2045; however, re-purposing residential outdoor potable water use to indoor use would not increase the water supply and would have to be accompanied by adding another water supply to meet the growing demand. By 2045, all potable water would be used for indoor purposes, including residential indoor, commercial, institutional and industrial use. Re-purposing residential outdoor potable water use to indoor potable use would require converting traditional.”<sup>6</sup>*

*UBWR’s statements continue to misinterpret Study Plan No. 22. UBWR’s No LPP Alternative should only replace 86,264 acre-feet (AF) of water. UBWR’s No LPP Alternative includes only 17,219 (AF) of culinary water with 68,076 (AF) of water treated by reverse osmosis. Therefore, not all culinary water in the county is re-purposed to indoor use. Consequently, this error is repeated throughout the PLP. The Commission Staff should assure the information is accurate. This inaccurate information must be deleted from the PLP.*

<sup>6</sup> PLP, p. 3-128, (emphasis added)

#### **UDWRe Response:**

**Refer to Section 3.5 for a revised discussion of the No Lake Powell Water Alternative.**

#### **Western Resource Advocates Comment 1:**

*(Section 3.2, Multiple Pages)*

##### **The PLP Fails to Present a Reasonable or Realistic No Action Alternative**

*Washington County Water Conservancy District’s (WCWCD) No Action Alternative does not adequately or accurately account for future water supply and demands in Washington County. WCWCD’s projected current and future water demands appear to be based on flawed assumptions and are greatly overstated by the project applicants. Similarly, the WCWCD significantly understates the potential of alternative water supply strategies. The PLP should be revised to include a realistic and reasonable No Action Alternative.*

*Western Resource Advocates presents here a realistic No Action Alternative based in part upon our Local Waters Alternative to the Lake Powell Pipeline<sup>1</sup> that corrects these flaws, and that would also incur less environmental harm than the applicant’s proposed LPP action. Our alternative shows how Washington County can pursue water conservation, water reuse, and*

*conversion of agricultural water to M&I uses to meet future water needs and avoid construction of a costly and environmentally damaging water supply pipeline. Our critique of the LPP is supported by comments from the Office of the Legislative Auditor General, Governor Herbert, and the project applicants themselves. Below we provide in detail the data flaws presented by the project applicants.*

*In 2013, Western Resource Advocates submitted the Local Waters Alternative to FERC as a reasonable and realistic No Action Alternative to the LPP. Although the project applicants have since updated some of their water demand and supply data, the central conclusions of the Local Waters Alternative remain unchanged:*

- The Local Waters Alternative (or a similar set of approaches) more than meets future water needs in Washington County.*
- Implementation of reasonable new conservation measures would substantially lower future water demand projections.*
- Reuse and agricultural water transfers can provide significant amounts of new water supply to meet projected water needs.*
- The Local Waters Alternative costs significantly less than the proposed LPP.*

*<sup>1</sup> Attached as Exhibit 1.*

**UDWRe Response:**

**Refer to the related text at the end of the response to Andrew Kramer Comment 5.**

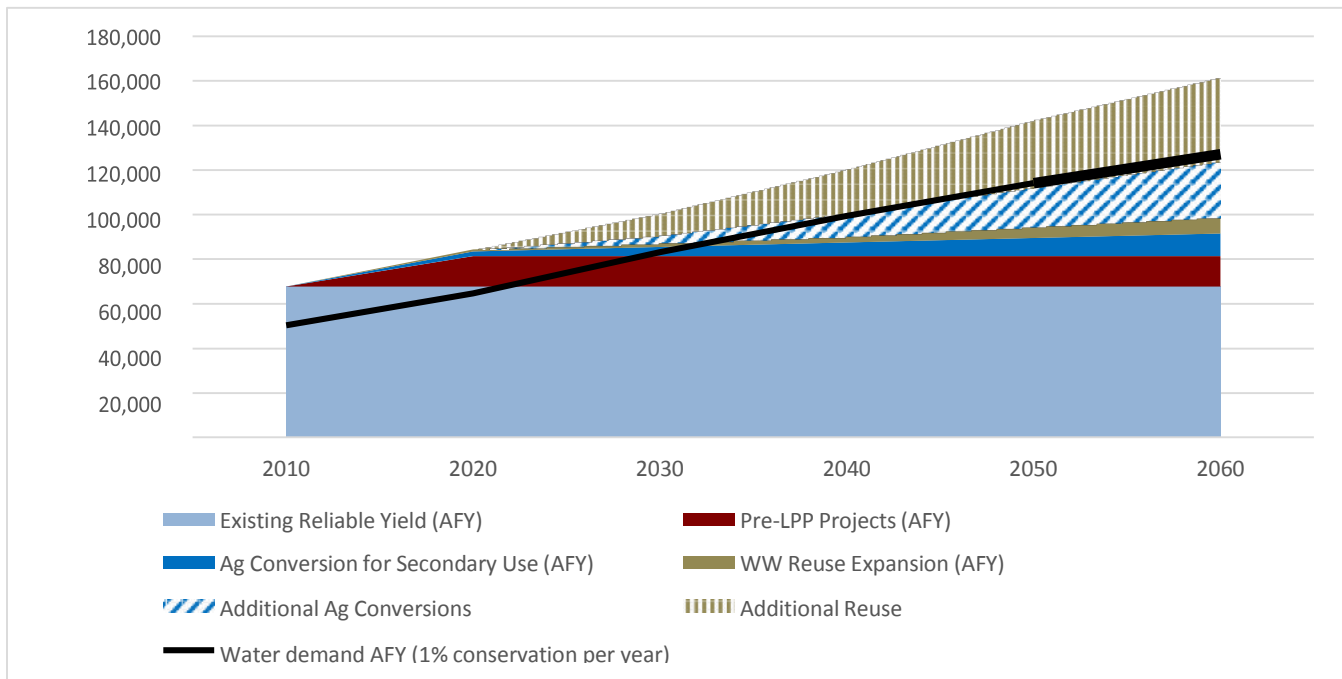
**Note also that the No Action Alternative and the No Lake Powell Pipeline Water Alternative are separate alternatives as required by the FERC study plan.**

**Western Resource Advocates Comment 2:**

*(Section 3.2, Multiple Pages)*

*For this comment letter, we revised parts of the Local Waters Alternative to reflect updated data from the project applicants<sup>2</sup> and to illustrate that our solutions remain viable. Figure 1 (below) shows updated data for Western Resource Advocates' No Action Alternative. We use many of the same water supplies as reported by WCWCD in Figure ES-2 of the 2015 Water Needs Assessment (2015 WNA): existing reliable yield, pre-LPP projects, agricultural conservation for secondary use, and the wastewater reuse expansion water. However, we do not include potable or secondary water from the LPP. In addition, we add in extra water resources from expanded reuse and expanded agricultural water conversions, as described below. Our population projection also matches the ones used in the 2015 WNA.*

*Figure 1. WCWCD's Supply and demand projections under Western Resource Advocates' revised No Action Alternative*



<sup>2</sup> Our use of the applicants' data should not be construed as an endorsement of their analysis. Indeed, we remain skeptical of the validity of the applicants' claimed water supply and demand projections.

**UDWRe Response:**

**Refer to the related text at the end of the response to Andrew Kramer Comment 5.**

**Note also that the No Action Alternative and the No Lake Powell Pipeline Water Alternative are separate alternatives as required by the FERC study plan.**

**Western Resource Advocates Comment 3:**  
(Section 3.2)

***a. The PLP Greatly Exaggerates Current and Future Water Demands***

*Energy generation is not the LPP's primary purpose. The LPP is primarily intended as a water supply project. It is therefore essential to look closely and evaluate the validity and reliability of the claim that LPP water is "needed" by the project applicants during the planning horizon covered.*

*The PLP's current and future water use projections come from the Utah Division of Water Resources' (Division) "Kanab/Virgin River Basin GPCD Projections and Use to 2060."<sup>3</sup> However, this data sheet does not appear to be accessible to the public on the Division's website (we obtained it by directly requesting it from Division staff). There is no explanation of the methodology used to derive these water use data, nor any explanation of why they differ*

*considerably from data presented in the 2011 version of the Water Needs Assessment (2011 WNA).<sup>4</sup>*

*For example, in the 2011 WNA, the 2010 figure for baseline water use per person – which has a significant effect on future water demand projections – was 294 gallons per capita per day (GPCD).<sup>5</sup> By contrast, in the 2015 WNA the 2010 baseline figure jumps to 325 GPCD.<sup>6</sup> This change represents an 11% increase from the original data, and the PLP fails to explain why such a dramatic change in this historic estimate has occurred.*

*In addition, based on the 2011 WNA, Kane County Water Conservancy District (KCWCD) did not have an explicit need for the water that would be obtained from the LPP. The 2011 WNA states: “For all four subbasins, a combination of existing and new ground water supplies is sufficient to meet all future needs within the planning horizon. Thus based strictly on water need, LPP supplies are not needed in the KCWCD service area within the 2060 planning horizon.”<sup>7</sup>*

*However, the 2015 WNA now claims that Kane County cannot survive past 2035 without the LPP. The way the data are presented and calculated in the 2015 WNA is opaque and makes it difficult to understand what caused this change. This must be explained by the project applicants.<sup>8</sup>*

*The failings of the 2015 WNA reflect a statewide trend in insufficient water supply and demand analyses from the Division. A May 2015 performance audit from the Office of the Legislative Auditor General thoroughly documents that water needs data coming from the Division is frequently unreliable and inaccurate. A formal report entitled, “A Performance Audit of Projections of Utah’s Water Needs,” (Audit) (i) determines the reliability of the division’s data; (ii) assesses the accuracy of the division’s projections of water demand and supply; and (iii) reviews options for extending Utah’s currently developed water supply.<sup>9</sup> While this audit looks at state-wide data, the audit’s conclusions and recommendations apply to individual parts of the state, including Washington County, and the overall findings are consistent with Western Resource Advocates’ past critiques of the Division’s water data and analysis.*

*Specifically, the Audit of the Office of the Legislative Auditor General made the following conclusions on the Division’s projections of Utah’s water needs:*

- *The Division does not have reliable local water use data.<sup>10</sup>*
- *The Division needs an improved process for ensuring that water data is reliable.<sup>11</sup>*
- *The reliability of the Division’s Baseline Water Use Study is questionable, and the source data and methods used to prepare the Baseline Study are poorly documented.<sup>12</sup>*
- *The accuracy of the Division’s water demand projections is uncertain.<sup>13</sup>*
- *Local water providers, including those located in St. George, have the ability to expand their own sources of water supply.<sup>14</sup>*

*Of note, the Utah Department of Natural Resources (DNR) – including the Division itself – is on the record supporting the findings of the Audit:*

*We believe the audit results will strengthen our processes. We agree with many of these results and look forward to improving the processes used to determine Utah’s current and future water use and supply data.<sup>15</sup>*

*In their official agency response letter, the DNR and the Division also agree with all 3 of the Audit's recommendations related to improving the reliability of the Division's water use data.<sup>16</sup> The PLP should be revised accordingly after improvements in data quality are carried out by the Division.*

<sup>3</sup> PLP at 3-127.

<sup>4</sup> See 2011 WNA (Draft Study 19).

<sup>5</sup> 2011 WNA at ES § 2.2.

<sup>6</sup> 2015 WNA at § 3.2.1.

<sup>7</sup> 2011 WNA at § ES 4.3 (*emphasis added*).

<sup>8</sup> Given the comparatively small amount of water that Kane County would receive (4,000 AFY) from the LPP, our comments remain focused on the data presented by Washington County since they propose to use the vast majority of water from the LPP (more than 82,000 AFY). However, the applicants' failure to justify this claimed demand is typical and illustrative of the PLP's inadequacies.

<sup>9</sup> OFFICE OF THE LEGISLATIVE AUDITOR GENERAL, STATE OF UTAH, A PERFORMANCE AUDIT OF PROJECTIONS OF UTAH'S WATER NEEDS, REPORT TO THE UTAH LEGISLATURE NO. 2015-01 (May 2015), attached as Exhibit 2.

<sup>10</sup> *Id.* at ii.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> *Id.* at 25.

<sup>14</sup> *Id.* at 50.

<sup>15</sup> *Id.* at 67 (DNR response).

<sup>16</sup> *Id.* (DNR agreed with the Legislative Auditor General's recommendations that the Division should: (i) review water use data annually to perform trend analysis; (ii) work with state water agencies to develop an efficient and effective system of collecting accurate water use data from public water providers; and (iii) get statutory authority from the legislature to validate the annual water use reported by public water providers.)

#### **UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**2009 water use data was utilized for the 2011 draft Water Needs Assessment. A more detailed 2010 assessment was completed after it was published. That data showed less water delivered to customers within the Washington County systems. However, the detailed 2010 water data also had the added benefit of the new 2010 census population data, released around 2012. When dividing by the new (lower) official 2010 census population data, the per capita use increased because the population showed some 20,000 less people (this being within the recession years). In summary, the 2015 Water Needs Assessment has the benefit of better water use and population data.**

**Refer to the related text at the end of the response to Andrew Kramer Comment 5.**

#### **Western Resource Advocates Comment 4:**

*(Section 3.2, Multiple Pages)*

***b. The PLP Significantly Underestimates the Potential of Conservation to Reduce Future Water Demands***

*A conservation goal of 1% reduction in per capita water use per year (including passive and active conservation) is proper and reasonable. In 2008, St. George anticipated that their per capita water use would decline by 1.5 to 2% per year in the years going forward as a result of their conservation program efforts.<sup>17</sup> Yet for the purposes of the PLP, WCWCD's plan is to achieve a 9% reduction in per capita water use over 50 years. This equals a proposed conservation rate of 0.19% annual reduction in per capita water use. This rate is considerably less than the approximately 0.30% annual reduction in per capita water use that one is justified to assume would occur from passive conservation alone over the same time frame (i.e., the water use reductions that will occur. This WCWCD's de minimis goal is far less than its past conservation gains. WCWCD reports achieving a 26% reduction in per capita water use in just ten years, from 2000 to 2010. Such a dramatic shift must be explained and justified; yet, it is not. It simply appears that the 9% figure is adopted without analysis from the Division's statewide conservation target.<sup>18</sup>*

*A reasonable No Action Alternative would include, as a meaningful conservation rate for planning purposes, at least a 1% annual reduction in per capita water use, based on each previous year's rate of water use. Over a 50 year timeframe, this level of conservation would result in a nearly 40% reduction in per capita use from 2010 levels. We assume that about one third of these water demand reductions would be achieved by passive conservation, and the rest through proactive investment in water efficiency techniques, practices, and technologies.*

*A 1% annual reduction in per capita water use includes a 0.30% reduction attributable to passive conservation, and is the same "high" passive conservation scenario adopted by the state of Colorado in its state-wide water supply planning process. This passive savings rate is based upon existing regional and national passive conservation studies, regional M&I water demand reports, and water conservation plans on file with the state of Colorado. This level of water use reduction is estimated to occur as a result of retrofitting housing stock and businesses that exist prior to 2016 with high-efficiency fixtures and appliances. It takes into account the 1992 National Energy Policy Act, the 2002 California Energy Commission (CEC) Water Efficiency Standards, and the 2007 California Assembly Bill 715. It assumes that (1) water and energy savings will become increasingly important to water customers as water and fuel costs rise; (2) high efficiency fixtures and appliances will become increasingly efficient as technology improves and customers strive to reduce their variable costs related to water and energy; and (3) due to the size and power of California's economy, products compliant with California efficiency standards will dominate the stream of commerce in the Western U.S., including Utah. The factors affecting passive water savings in Colorado are identical to those in Utah, suggesting this passive savings rate is equally applicable for the LPP service area.*

*Numerous studies indicate that a 1% annual reduction in per capita water use is the business-as-usual conservation rate of many utilities in the Mountain West region. The 2015 Strategic Plan of the Colorado Department of Natural Resources notes that on average, Colorado water providers have set goals to reduce demand from water conservation plan implementation by approximately 1% to 2% annually.<sup>19</sup> A survey of 100 cities and water agencies in the Colorado River Basin found that "the majority of people receiving water from the Colorado River basin live in areas where per capita deliveries dropped an average of at least one percent per year from 1990 to 2008."<sup>20</sup> The fact that the system-wide per capita water use of these areas is much lower than that of Washington County and St. George suggests that the unrealized water conservation*



*opportunities in the LPP service area remain significant, and that a conservation target equivalent to 1% annual reduction in per capita water use in the next 40-50 years is modest and reasonably attainable.*

*The state Audit also shows how Utah's water conservation efforts can and should significantly exceed an annual per capita reduction of only 0.19%. Washington County projects that per capita water use will decline from 325 GPCD (in 2010) to 285 GPCD in 2060. This 2060 projected water use is significantly higher than the Division's statewide projected per capita water use of 220 GPCD in 2060. The Audit found that even the 220 GPCD projection to be too high based on likely water use patterns in Utah, and other Western States.<sup>21</sup> The Audit specifically compared water use rates in the Washington County region to those in Las Vegas, saying: "The Southern Nevada Water Authority, which serves the Las Vegas region, has a goal to reduce water use to 199 by 2035. In contrast, the communities in Southwestern Utah, which have a climate that similar to that of Southern Nevada, have a goal to reduce water use to 292 gpcd by the year 2060."<sup>22</sup> In their official agency response letter, the DNR and the Division agree - point by point - with all of the Audit's recommendations for reducing demand for water through conservation and policy choices.<sup>23</sup>*

*Other arid states, like Texas and Colorado, have also passed water conservation goals similar to 1% per year. The State of Texas convened a Task Force in 2004, which ultimately recommended a 1% per capita water use reduction goal, driving their system-wide water use down to 140 GPCD.<sup>24, 25</sup> Already, dozens of utilities in Texas have met this goal, and as a result of their success they have set new, lower goals. The State of Colorado recently adopted "Colorado's Water Plan," which set a state water conservation goal of 400,000 acre-feet of municipal and industrial water use by 2050.<sup>26</sup> This translates to almost a 1% reduction in GPCD per year, without even including passive water savings.*

*WCWCD's proposed future conservation programs appear tailored to fit the PLP's less-than de minimis 9% target, rather than exploring how conservation programs could more robustly reduce per capita water use. The proposed conservation programs focus on residential water use primarily, and outdoor residential water use in particular.<sup>27</sup> While this is an important part of the water use equation to address, this sector represents less than half of water use in the county, the rest is in the CII sector (commercial, industrial and institutional sector).<sup>28</sup> Not much explanation is given about why CII water use is so high, how it is likely to change over time, or what conservation measures would be effective in that sector.*

*Corroborating this, the Audit specifically mentions the high CII water use in the Kanab/Virgin River Basin, in which Washington County is located, saying "Ideally, the division's projection for the demand in the Kanab/Virgin River Basin should reflect a separate analysis of the likely growth in the CII category, rather than just assuming it will be proportionate to the growth in the permanent residential population."<sup>29</sup>*

*Finally, WCWCD's assertion that the No Action Alternative to the Lake Powell Pipeline would require the elimination of all outdoor watering is not only entirely false, it reveals a lamentable lack of effort and rigorous analysis in crafting the PLP's No Action Alternative. Communities across the West are using significantly less water than those in the LPP service area, while still using 30-50% of residential water outdoors. These other communities, including Denver, Tucson, and Santa Fe, have achieved large reductions in water use without sacrificing quality of life for their customers through efficiency programs and educational efforts. Importantly, societal norms have changed in these communities about what represents a modern "American yard" in the arid*

*West. Both of these forces, physical reductions in use and changing norms, will enable outdoor water use to continue in the LPP service area while resulting in significant water savings.*

*Several proven conservation strategies can be effective in achieving a 1% reduction in GPCD. These strategies are explained in detail in our Local Waters Alternative, are in line with the Audit's recommended conservation measures. They include, but are not limited to:*

- *Revised conservation goals that reflect each region's capacity to conserve*
- *Universal metering of potable and secondary water usage*
- *Use of conservation water pricing structures<sup>30</sup>*

*Utah Governor Herbert's budget recommendations state that sub-standard water conservation targets are not acceptable in arid areas of Utah where billion-dollar water supply projects are planned.<sup>31</sup> The PLP should be revised to reflect the reasonable and realistic water conservation potential in Washington County.*

<sup>17</sup> City of St. George, Water Conservation Plan Update (2008).

<sup>18</sup> See Audit at 25.

<sup>19</sup> COLORADO DEPARTMENT OF NATURAL RESOURCES, PERFORMANCE PLAN FOR FISCAL YEAR 2015-16 at 131 (November 23, 2014).

<sup>20</sup> M.J. COHEN, MUNICIPAL DELIVERIES OF COLORADO RIVER BASIN WATER at iii (Pacific Institute 2011).

<sup>21</sup> Audit at ii.

<sup>22</sup> *Id.* at 29.

<sup>23</sup> The four water planning and conservation recommendations of the Legislative Auditor General supported by the DNR and DWRe are: (i) DWRe should work with local water providers to create conservation goals for each river basin that reflect each basin's individual capacity to conserve; (ii) DWRe should regularly update its projections of future demand as new information becomes available, and provide a range of options that includes investment, conservation, or supply development under a range of demand scenarios; and the legislature should consider (iii) requirements to phasing in universal metering, and (iv) adoption of pricing policies that encourage efficient water use. *Id.* at 44-45.

<sup>24</sup> S.B. 1094, 78th Leg., Reg. Sess. (Tex. 2003).

<sup>25</sup> WATER CONSERVATION IMPLEMENTATION TASK FORCE, TEXAS WATER DEVELOPMENT BOARD SPECIAL REPORT, REPORT TO THE 79TH LEGISLATURE, at 5-6 (2004), available at [http://www.conservewatergeorgia.net/resources/TX\\_Conservation\\_Task\\_Force\\_Recs.pdf](http://www.conservewatergeorgia.net/resources/TX_Conservation_Task_Force_Recs.pdf)

<sup>26</sup> COLORADO WATER CONSERVATION BOARD, COLORADO'S WATER PLAN at ES-14 (2015).

<sup>27</sup> MADDAUS WATER MANAGEMENT, FINAL TECHNICAL MEMORANDUM PREPARED FOR THE UTAH DIVISION OF WATER RESOURCES AND WASHINGTON COUNTY WATER CONSERVANCY DISTRICT at 35 (2015).

<sup>28</sup> 2015 WNA at 3-2 (2015) (Fig. 3-1).

<sup>29</sup> Audit at 34.

<sup>30</sup> *Id.* at 44, 45.

<sup>31</sup> Governor Gary R. Herbert, Investing in the Future of Utah: Budget Recommendations, Fiscal Year 2017

#### **UDWRe Response:**

**See the discussion of the No Action Alternative in Section 3.2 of Exhibit E.**

**Refer to the related text at the end of the response to Andrew Kramer Comment 5.**

## Western Resource Advocates Comment 5:

(Section 3.2, Multiple Pages)

### ***c. The PLP Uses Conflicting and Ambiguous Data to Describe Current and Future Water Supplies***

*Current and future water supplies are not adequately justified in the PLP. The lack of clarity in the presentation of current and future water supplies in Washington County plagued the Draft Study Water Needs Assessment in 2011, and unfortunately this same issue persists in the 2015 version. Conflicting and ambiguous data are reported throughout the 2015 WNA and PLP.*

*For example, the PLP, states:*

*The 2028 potable water supply [would be] about 72,362 acre-feet per year and secondary water supply of 8,505 acre-feet per year ....The No Action Alternative would not provide adequate water supply to meet projected water demands from 2028 through 2060.<sup>32</sup>*

*However, the PLP later claims:*

*“... the 2025 Washington County potable water supply of 72,362 acre-feet per year, would be completely used by 2052, and the total potable water demand would be 130,245 acre-feet per year in 2052... Therefore, the 2052 M&I water supply deficit would be 57,883 acre-feet per year.<sup>33</sup>*

*Thus, the same projected potable water supply is associated with two different times, three years apart, leaving the reader uncertain about how long these current supplies are useful. In addition, there are major discrepancies in the reported volumes of secondary water available in the future. The PLP Ch 3 vol 5, section 3.2.1 (pdf pg 61) states that:*

*The 2028 potable water supply of about 72,362 acre-feet per year and secondary water supply of 8,505 acre-feet per year would include existing supplies, planned WCWCD water supply projects, wastewater reuse, and future agricultural water conversion resulting from urban development of currently irrigated land.*

*However, a careful reading of Table ES-1, Figure ES-2 and various portions of the text in the 2015 WNA, it appears that total, future secondary water resources total over 25,000 AFY. See Table 1 for documentation of these resources.*

*Table 1. Washington County Water Supplies as reported in the WNA show conflicting data compared with their statements in the PLP.*

	AF/yr	Available By Year	Data Source
Existing Potable Supplies	59,172	2010	WNA 2015, Table 4-3 [pdf pg 61]
Future Potable Projects	13,670	2020	WNA 2015, Table ES-1 [pdf pg 13]
<b><i>Potable TOTAL</i></b>	<b><i>72,842</i></b>		
Existing Secondary Supplies	8,505	2010	WNA 2015, Table 4-4 [pdf pg 61]

Agricultural Transfers	10,080	2060	WNA 2015, Section 4.2.5.3 [pdf pg
Wastewater Reuse Expansion	7,300	2060	Derived from WNA Table ES-1 [pdf pg 13]
<b>Secondary TOTAL</b>	<b>25,885</b>		WNA 2015, Table ES-1 [pdf pg 13]
<b>GRAND TOTAL</b>	<b>98,727</b>		

<sup>32</sup> PLP at § 3.2.1.

<sup>33</sup> PLP at § 3.5.1.1.

**UDWRe Response:**

**Refer to the discussion of the No Action Alternative in Section 3.2 of Exhibit E.**

**Refer to the related text at the end of the response to Andrew Kramer Comment 5.**

**Western Resource Advocates Comment 6:**

*(Section 3.2, Multiple Pages)*

***d. The Applicants Acknowledge that Reuse Could Provide Nearly 55,000 AFY of New Water Supplies***

*Strikingly, the PLP describes how the WCWCD could develop a reverse osmosis (RO) advanced water treatment facility under a No Lake Powell Water Alternative, yet this is not reflected in the earlier sections, nor is it explained in any level of detail, despite the fact that it would provide almost 55,000 AFY of new water supply – a very substantial amount of water.<sup>34</sup>*

*By contrast, the 2015 WNA mentions future reuse water primarily in the context of fully utilizing the existing St. George wastewater reuse plant, which would result in an additional 7,300 AFY. The 2015 WNA contains only a brief mention of the potential for “49,000 ac-ft per year in 2060” of reuse water that could (in theory) be made available from the construction of a new treatment facility.<sup>35</sup> This large volume of water is not further explained, nor is it mentioned in connection with the aforementioned reverse osmosis option. Additionally, demand for reuse is outlined for the cities Hurricane, Ivins, La Verkin, Toquerville, and Washington, but yet there is no information about the source of this reuse water in these regions.<sup>36</sup> These substantial amounts of reuse deserve more analysis and properly belong as part of the No Action Alternative, especially in light of the water community’s decisive push over the past several years to move towards greater use of direct and in-direct potable reuse as a viable and safe future water supply.*

*In Figure 1 (~~see these comments at page 3~~ shown in a comment previously<sup>UDWRe</sup>) we assume that 49,000 AFY is the maximum potential for reuse by 2060, as stated by project applicants in the WNA. We assume this figure includes current and future wastewater reuse from the St. George reuse plant – which amounts to 11,200 AFY – thus the additional reuse water depicted in Figure 1 is 37,800 AFY.*

<sup>34</sup> PLP at § 3.5.1.2.

<sup>35</sup> 2015 WNA at § 4.2.5.2.1.

<sup>36</sup> 2015 WNA at § 4.2.5.2.

**UDWRe Response:**

**Refer to the discussion of the No Action Alternative in Section 3.2 of Exhibit E.**

**Refer to the related text at the end of the response to Andrew Kramer Comment 5.**

**Western Resource Advocates Comment 7:**

*(Section 3.2, Multiple Pages)*

***e. The Applicants Significantly Understate the Potential for Agricultural Water Transfers***

*WCWCD's analysis of water available from agricultural water transfers is unchanged from the 2011 Draft Study and greatly underestimates the potential for transfers of water from agriculture. The Local Waters Alternative explains in detail that the WCWCD significantly understates the potential for agricultural water transfers to meet projected water needs. This analysis, which reconciles both the Water Needs Assessment and the Draft Study Report 6: Land Use, shows that a conservative estimate would result in at least 13,600 AFY by 2060. A plausible maximum amount of up to 35,200 AFY could be made available from agricultural conversions. Our larger estimates result from the amount of water that would be transferred to municipal uses once the land needed to support the growing population is converted from agricultural to municipal uses. Figure 1 shows this additional water from agricultural conversions, minus the 10,080 AFY already assumed by WCWCD.*

*The Office of Legislative Auditor General recently made a similar critique of the Division's low agricultural water transfer estimates in a section entitled: "Division's Agricultural Conversion Estimates Are Understated."<sup>37</sup> While the Auditor General's analysis cites the Division's understated Weber Basin projections as an example, the Auditor General's critique is equally applicable to Washington County's projections. The Auditor General concludes that "[s]tatewide, there appears to be far more water available for agricultural conversions than anticipated in the division's water plans."<sup>38</sup>*

<sup>37</sup> *Audit at 53-55.*

<sup>38</sup> *Id. at 55.*

**UDWRe Response:**

**No meaningful M&I conversion of agricultural water can occur without reverse osmosis. The major water right on the Virgin River for the St. George and Washington Canal Company, derives from water polluted by the La Verkin Hot Springs as set forth more fully in the Water Needs Assessment and other relevant reports. This water, with an average total dissolved solids (TDS) level of 11,000 mg/l which is significantly over the legal limit, is too brackish for culinary treatment and would require reverse osmosis, a very expensive process. For this reason, WRA's attempt to extend the Audit's observations about Weber Basin to Washington County is not supported by the facts. This approach would call for approvals that are not within the control of UDWRe or the Districts and, accordingly, cannot be included in the No Action Alternative. Utahns have consistently indicated a desire to protect agricultural uses (See the results of the *Envision Utah Survey*, so political support for WRA's proposal would also not be readily achievable.**

**Western Resource Advocates Comment 8:**

*(Section 3.2, Multiple Pages)*

***f. The PLP Should be Revised to Include a Realistic and Reasonable No Action Alternative***

*Given the recommendations made in the State Audit, the Local Waters Alternative and all the documented trends in the West, it is clear that the PLP includes inflated water demands and ignores reasonable alternative water supplies and water conservation measures. Washington County has some of the highest rates of water use in the West and cannot ignore the tried-and-true water conservation strategies utilized by cities across the west, including appropriately comparable neighbors like Las Vegas. The PLP does not represent the best available information to craft alternatives and analysis in an environmental impact statement. Accordingly, the PLP must be revised before the final license application is submitted to FERC.*

**UDWRe Response:**

**Water conservation measures promoted by WRA are not realistic for Washington County. (Refer to the water conservation goal discussion in the response to Andrew Kramer Comment 5 in the General Comments section) Furthermore, UDWRe and the Districts do not have the power to require the actions proposed by WRA and thus are not proper to consider in the No Action alternative. In addition, the cost of the actions would far exceed the costs of the proposed action and the No Lake Powell Water Alternative because the costs of the additional conservation measures proposed by WRA would be higher than any other conservation measures considered. The information on water use in the study reports is based upon the most recent water conservation analysis done by the District, none of which was considered by WRA in its report or by the Auditor. Likewise, the data on water supplies is the most up-to-date available and has been reviewed for accuracy not only by UDWRe but also by the Districts.**

**American Rivers Comment 1:**

*(Section 3.1, Page 3-1)*

**The PLP's Description of the Proposed Project Appears Incomplete**

*The description of the Proposed Project, specifically the Water Intake System, starts with “[t]he Water Intake System would pump Lake Powell water into the LPP Project.”<sup>3</sup> However, we understand that UBWR plans to release water for project operations from the Flaming Gorge Reservoir and wheel it to Lake Powell, where it then would be pumped into the project works. The water would travel in the Green River for approximately 40 miles through North Western Colorado before reaching Lake Powell.*

*As stated above, UBWR has an obligation to provide the Commission with information that OEP Staff need to determine the environmental impacts of the Project. A complete and accurate Project description is a critical starting point for that information. The public cannot be assured that the Commission will take a “hard look” at the environmental consequences of the Project if the analysis starts from an inaccurate Project description.<sup>4</sup>*

*In addition to describing the physical logistics of moving water between Flaming Gorge Reservoir and Lake Powell, UBWR also must describe how this water will be quantified in Lake Powell, what agreements are in place to ensure delivery, and how this proposed operation complies with the Law of the River.*



*We request UBWR revise or supplement the PLP to include a complete and accurate description of the Project, including any plans to move water from Flaming Gorge Reservoir to Lake Powell for diversion into the proposed Project works.*

<sup>3</sup> PLP, p. 3-1.

<sup>4</sup> “The sweeping policy goals announced in § 101 of NEPA are thus realized through a set of “action forcing” procedures that require that agencies take a ‘hard look’ at environmental consequences ....” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (internal quotations omitted).

**UDWRe Response:**

**The operation of the upper Colorado River, Flaming Gorge to Lake Powell, will not be changed from the current ROD. The study team will evaluate the project description to identify any need for further opportunities for enhancement.**

**The following text has been added to Study Report 18 Surface Water Resources in Section 3.1 Water Regulation:**

**Therefore, the State of Utah’s Colorado River rights from Lake Powell would be administered according to its water rights, whether it is utilized by Utah consistent with the No Action Alternative or through the Lake Powell Pipeline. According to the prior appropriation doctrine, the rights of senior water rights holders, including tribal water rights, must be protected with or without the LPP, regardless of hydrology, including potential hydrology affected by climate change. Under future climate change with lower streamflow, water available to junior water rights holders in the region could decline.**

**American Rivers Comment 2:**

*(Section 3.1, Page 3-1)*

**The PLP Does Not Describe How the Project Will Comply with the Law of the River’s Provisions regarding Inter-Basin Transfer**

*Under the Colorado River Compact (Colorado Compact), the “Upper Basin”<sup>18</sup> and “Lower Basin”<sup>19</sup> are each entitled to “the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum....” Under the Upper Colorado River Basin Compact (Upper Colorado Compact), Utah is entitled to 23 percent of the 7.5 million acre-feet (maf) allocated to the Upper Basin. Based on our review of the PLP, we understand that UBWR is proposing to divert water to which Utah is entitled as an Upper Basin State for use in a part of the state located in the Lower Basin.<sup>20</sup>*

*Article III(a) of the Compact apportions to each basin “in perpetuity . . . the exclusive beneficial consumptive use” of 7.5 maf annually. This has been interpreted to mean the Upper Basin’s 7.5 maf of beneficial consumptive use must occur exclusively in that basin.<sup>21</sup>*

*Article VIII of the Compact also provides “[a]ll . . . rights to beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that basin in which they are situated.”<sup>22</sup> The PLP does not adequately address this restriction on use of water from the Upper Basin to benefit the Lower Basin.*



Further, the PLP states that the “Water Intake System [of the Proposed Action] would pump Lake Powell water into the LPP Project.”<sup>23</sup> The Proposed Action’s diversion of water stored in Lake Powell for beneficial use in the Lower Basin also appears to run counter to the Upper Colorado Compact’s Article V, which provides, “[w]ater stored in reservoirs covered by this paragraph (a) shall be or the exclusive use of and shall be charged to the state in which the reservoir or reservoirs are located.”

The PLP does not address how the Project complies with Utah’s compact obligations. Given that this is the only source of water Utah has proposed to supply the Project, this issue is fundamental to the feasibility of the Project. We request that UBWR revise or supplement the PLP to explain how Utah proposes to take water from the Upper Basin for use in the Lower Basin in a manner that complies with its obligations under the Law of the River.

<sup>18</sup> “The term ‘Upper Basin’ means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming.” Colorado River Compact, Art. II(f).

<sup>19</sup> “The term ‘Lower Basin’ means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System below Lee Ferry.” Id., Art. II(g).

<sup>20</sup> PLP, p. 3-1.

<sup>21</sup> Douglas L. Grant, *Collaborative Solutions to Colorado River Water Shortages: The Basin States' Proposal and Beyond*, 8 Nev. L.J. 964, 988 (2008). See also James S. Lockhead, “An Upper Basin Perspective on California’s Claims to Water from the Colorado River Part I: The Law of the River,” 4 U. Denv. Water L. Rev. 290 (2000-2001) (“Lockhead”), p. 323.

<sup>22</sup> Colorado River Compact, Art. IIIV.

<sup>23</sup> PLP, p. 3-1.

#### **UDWRe Response:**

**The compacts do not prohibit the use of upper basin water within an upper division state. The seven Colorado River Basin states have agreed that this is consistent with the “Law of the River.”**

#### **American Rivers Comment 3:** (Section 3.1, Page 3-1)

##### **The PLP Does Not State whether UBWR Has Consulted with Arizona regarding Compliance with the Arizona Water Export Statute.**

The PLP states that the “Water Intake System would be constructed adjacent to the west side of Lake Powell approximately 2,000 feet northwest of Glen Canyon Dam in Coconino County, Arizona.”<sup>24</sup>

The Arizona Water Export Statute provides, “[a] person shall not transport water from this state unless approved by the director, but this article does not apply to or prohibit transporting water from this state as required by interstate compact, federal law or international treaty.”<sup>25</sup> It requires that any person seeking to transport water from Arizona for use in another state file an application and pay a fee. The Director of the Department of Water Resources must hold an administrative hearing prior to acting on the application.<sup>26</sup>

Table 2-1 of the PLP, “Potentially Required Federal, State and Local Permits, Licenses, Approvals and Reviews,” does not identify the need to obtain a permit to transport water from the director of the Arizona Department of Water Resources to transport water from Arizona to Utah.<sup>27</sup> The PLP does not indicate that UBWR has consulted with the Arizona Department of Water Resources regarding compliance with this statute.

We request that UBWR revise or supplement the PLP to state how UBWR intends to comply with the Arizona Water Export Statute.

<sup>24</sup> PLP, p. 3-1.

<sup>25</sup> Ariz. Rev. Stat. Ann. § 45-292(A).

<sup>26</sup> Id. at § 45-292(E).

<sup>27</sup> PLP, p. 2-5.

#### UDWRe Response:

**Arizona has been made aware of the proposed project, and will be coordinated with throughout this process; however, the Upper Colorado River Compact, of which Arizona is a signatory, requires all participants to facilitate use of a state’s own allocation.**

#### American Rivers Comment 4:

(Section 3.2.1, Page 3-111)

##### **The PLP’s Description of the No Action Alternative Appears Incomplete**

The PLP describes the “No Lake Powell Water Alternative,” as involving “a combination of developing remaining available surface water and groundwater supplies, developing reverse osmosis treatment of existing low-quality water supplies, and eliminating residential outdoor potable water use as a conservation measure in the WCWCD service area.”<sup>5</sup>

The PLP’s description of the No Action Alternative omits important information presented by Western Resource Advocates (WRA) regarding additional measures to reduce existing and forecasted demand in Washington County. WRA previously filed a “Local Waters Alternative” with the Commission for consideration as a variant of the No Action Alternative.<sup>6</sup>

According to WRA:

- The Local Waters Alternative more than meets the future water needs in Washington County;
- Implementation of reasonable new conservation measures would substantially lower future water demand projections;
- Reuse and agricultural water transfers can provide significant amounts of new water supply to meet projected water needs; and
- The Local Waters Alternative would cost significantly less than the proposed LPP.<sup>7</sup>

<sup>5</sup> PLP, p. 3-127.

<sup>6</sup> eLibrary no. 20130314-5010 (Mar. 13, 2013).

<sup>7</sup> See id.

*In addition, WRA has raised significant concerns about UBWR's projection of current and future water demands. These concerns have been confirmed by the Office of the Legislative Auditor for the State of Utah in a report entitled, "A Performance Audit of Projections of Utah's Water Needs."<sup>8</sup> That report found:*

- *UBWR does not have reliable water use data.<sup>9</sup>*
- *UBWR needs an improved process for ensuring that water data is reliable.<sup>10</sup>*
- *The reliability of UBWR's Baseline Water Use Study is questionable, and the source data and methods used to prepare the Baseline Study are poorly documented.<sup>11</sup>*
- *The accuracy of UBWR's water demand projections is uncertain.<sup>12</sup>*
- *Conservation will lead to less water use.<sup>13</sup>*
- *By excluding much of the growth in local water supplies, UBWR's projections accelerate the timeframe in which costly new water projects appear to be needed.<sup>14</sup>*

*We request that UBWR revise or supplement the PLP to address the Local Waters Alternative proposed by WRA. We also request that UBWR address the data concerns regarding the accuracy of its existing and future water demand data and the opportunities to reduce water use through conservation and to increase supply locally, which have been raised by WRA and the Office of the Legislative Auditor for the State of Utah.*

<sup>8</sup> Available at [http://le.utah.gov/audit/15\\_01rpt.pdf](http://le.utah.gov/audit/15_01rpt.pdf).

<sup>9</sup> *Id.* at ii.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* at iv.

#### **UDWRe Response:**

**Refer to the responses to Western Resource Advocates Comments 3, 7, and 8.**

#### **Utah Rivers Council Comment 1:**

*(Section 3.2, Multiple pages)*

**The No Action Alternative and the No Lake Powell Pipeline Water Alternative do not accurately account for water conservation potential or existing and future local sources of water**

##### **a. Socioeconomic Report**

*The LPP is wrongly determined to be an infrastructure feature of population and economic growth in Southern Utah. This is an incorrect assumption because the project is not driving growth. The population is growing because of a mix of factors including housing, economic conditions, employment and other factors. People are not moving to Washington County because of the Lake Powell Pipeline. Additionally, the cost estimates of the project are outdated and need to be adjusted to account for inflation and changes in design and material costs.*

#### **UDWRe Response:**

**Your comment has been noted. Costs of the project have been updated and can be found in Final Study Report 10 – Socioeconomics and Water Resource Economics.**

**Utah Rivers Council Comment 2:**  
(Section 3.2, Multiple pages)

**b. Water Needs Assessment**

*The water demand curve in the Water Needs Assessment (“WNA”) is based on exaggerated population projections and inflated per--capita water use figures. The combined effect of the non--permanent, tourist, and college student populations was qualitatively discussed. However, effects of these populations on per capita water use and total water demand were not quantified. The future ratio of non--permanent population to permanent population was assumed to be equal to the current ratio, and thus the non--permanent population was assumed to grow at the same rate as the permanent population within the planning horizon. This assumption is not explained in any way.*

*The applicant is using Scenario C for their population predictions. This would be high density throughout the entire county. There has been no analysis to other infrastructure needs to determine if the Washington County can support this density. Scenario B was determined by the state to be the more likely scenario.*

*The WNA also assumes that per capita water conservation will continue at a slower rate than has occurred in previous years. It seems more reasonable to assume the area will most likely continue to conserve water at a rate similar to what they have done in the past than to assume they will slow down their conservation efforts. This assumption also ignores the impacts that potential water pricing increases would have on the demand for water. Since Washington and Kane Counties are among the nation’s highest per person water user, water conservation potential is much more significant the applicant is willing to acknowledge.*

*Many alternative water sources exist that the applicant either ignored or did not fully analyze. These include:*

**Water Conservation.** *Even though Utah is America’s #1, highest municipal water user, according to the U.S.G.S., Utah’s water conservation goal is to reduce water use by just 1% this year. By contrast, California’s water conservation goal is to reduce water use 25% this year. The Legislative Audit of the Division of Water Resources criticized Utah’s lack of water conservation progress and noted the St. George area is among the country’s highest per person water users but is not planning to conserve a single drop of water after 2025, yet they forecast a shortage by 2030.*

**Surplus Agricultural Water.** *Another source of water comes when urban growth replaces agricultural lands, creating a surplus of water formerly used to irrigate crops. State documents show the St. George area can expect at least 80,000 acre--feet of unused agricultural water to be available in the future.*

**Removing Water Wasting Subsidies.** *The least expensive source of water could come from changing tax policy. Since the St. George water supplier receives more money collecting property taxes than from selling water, eliminating property taxes would ensure that all users pay the full cost of their water use, including large government water users and churches, which do not pay property taxes.*

**UDWRe Response:**

Washington County, the region that would benefit the most from the proposed Lake Powell Pipeline already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline target. It has started working towards an additional 10 percent conservation goal. The area's hot, arid climate coupled with high tourism and a high number of second homes drives the per capita use of water up. Water conservation will continue to be a high regional and state priority.

In order to meet future demand, a variety of strategies will need to be implemented. The LPP is just one of the strategies that will be used to meet future regional demand. Other strategies include further water conservation, treatment of water converted from agricultural to municipal, etc.

The ratio of non-permanent to permanent population has remained fairly constant over time. The WNA does not assume a slower conservation rate over time. When all relevant factors are taken into account, Washington County is not among the highest per person water user. California's water usage reduction goals are not informative.

The Audit did not say that St. George area is among the country's highest per person water users, nor did it say that St. George is not planning on conserving a single drop of water after 2025 or that the city forecast a shortage by 2030. St. George is mentioned only once in the document as having "at least some additional sources of supply available for future development." This unattributed and unquantified generality does not suffice to show anything about water usage or conservation in the St. George area. No state document is cited for the proposition that the St. George area can expect "at least 80,000 acre--feet of unused agricultural water to be available in the future." This number is unrealistic, given the information provided in the response to Andrew Kramer Comment 5 in the General Comments section. It is unclear who the "St. George water supplier" is and the source of the assertion regarding property taxes. It is not true that eliminating property taxes would ensure that users would pay the full cost of their water use. Property taxes are used by WCWCD for general public benefits including endangered species programs, watershed protection efforts, water conservation programs, programs designed to proactively protect ground water resources from contamination, seed money for new project planning, including preliminary environmental analysis and efficiency reviews, and grant programs to local water companies and municipalities in the service area. Some portion of property tax revenues supports facilities that provide recreational benefits.

**Lisa Rutherford and Paul Van Dam Comment 7:**

***Chapter 3 - Proposed Action and Alternatives***

***3.1.1.3 Hydro System (Page 3-24)***

*The Hydro System would include six hydroelectric generating stations and convey the Lake Powell water from the High Point Regulating Tank-2 at ground level elevation 5,691 feet MSL adjacent to Highway 89 in Kane County, Utah for approximately 87 miles through a buried 69-inch diameter penstock to Sand Hollow Reservoir at ground elevation 3,060 feet MSL in Washington County, Utah (Figure 3-13). The Hydro System would consist of buried penstock segments, four in-line hydroelectric generating stations (HS-1, HS-2 South, HS-3, and HS-4 (Alt.)), a forebay reservoir, and the Hurricane Cliffs pumped storage hydroelectric generating station facilities, an*



afterbay reservoir, a low pressure water tunnel and buried penstock, and the Sand Hollow hydroelectric generating station. The Electrical Transmission System is described in Section 3.1.1.5 of this chapter.

**COMMENT**

*As noted previously, if the PSP is integral to the FERC licensing, Applicant should be required to verify its construction and not just be used to sell the project to FERC.*

**UDWRe Response:**

While it is true that this project is a water conveyance project, the project includes proposed hydropower facilities. The power generated by the project may support the grid system in several alternative ways. The use of power from the project for project power needs would offset demands on the grid that might otherwise be made by the project. may extend.

18 CFR§ 1501.5(c) provides that if there are multiple agencies with NEPA responsibilities for the same action or related group of actions, the agencies shall determine which agency shall be the lead agency and which shall be cooperating agencies. The section sets forth various factors to be considered in choosing the lead agency “if there is a disagreement among the agencies.” BLM, Reclamation, and NPS have agreed to be cooperating agencies. FERC, as lead agency, and each cooperating agency, will be responsible for ensuring that the information and analyses needed to support its decisions are adequately addressed in the EIS. USFWS declined to be a cooperating agency. However, FERC and all other federal agencies with permitting responsibilities for elements of the entire project are consulting with USFWS as required by the Endangered Species Act and other applicable legislation so there is no possibility USFWS, FERC, or the other federal agencies will not be able to fulfill their statutory responsibilities.

**Lisa Rutherford and Paul Van Dam Comment 8:**

**3.1.1.3.1 Penstocks (Page 3-25)**

*The fifth penstock segment would start at the northwest end of the proposed forebay reservoir, run 1,585 feet through a low pressure tunnel to a proposed vertical shaft east of the Hurricane Cliffs, and run 2,410 feet from the vertical shaft bottom through a high pressure tunnel and penstock to the Hurricane Cliffs Pumped Storage Hydro Station, with a finish grade surface elevation of 3,565 feet MSL (Figure 3-13, and Map Panel 58 in Appendix E).*

*(Page 3-27) The sixth penstock segment would start at the west side of the Hurricane Cliffs Pumped Storage Hydro Station afterbay reservoir and run 4.4 miles to Sand Hollow Hydro Station with a ground surface level elevation of 3,065 feet MSL (Figure 3-13).*

*(Page 3-27) The Hurricane Cliffs Pumped Storage afterbay reservoir would have a high water level elevation of 3,545 feet MSL and the hydraulic grade line at the entrance to Sand Hollow Hydro Station would be 3,507 feet MSL under the design flow condition.*

*(Page 3-27) The sixth penstock segment would start at the west side of the Hurricane Cliffs Pumped Storage Hydro Station afterbay reservoir and run 4.4 miles to Sand Hollow Hydro Station with a ground surface level elevation of 3,065 feet MSL (Figure 3-13).*

*(Page 3-27) The Hurricane Cliffs Pumped Storage afterbay reservoir would have a high water level elevation of 3,545 feet MSL and the hydraulic grade line at the entrance to Sand Hollow Hydro Station would be 3,507 feet MSL under the design flow condition.*

*(Page 3-33) The HS-4 (Alt.) tailrace would discharge directly to the proposed Hurricane Cliffs Pumped Storage forebay reservoir and would not require an overflow retention basin.*

(Page 3-33) **3.1.1.3.3 Forebay Reservoir.** *The proposed forebay reservoir would be located on BLM administered land in a broad north-south trending valley set back from the Hurricane Cliffs face approximately 1,600 to 2,000 feet (see Figure 3-20 and Map Panels 57 and 58 in Appendix E).*

**COMMENT**

*As shown in the seven preceding excerpts from the PLP, Chapter 3, Proposed Action and Alternatives, and others that followed in that chapter, the PSP is an integral part of the project for purposes of FERC licensing, but the PSP will be a huge challenge for funding and construction and very possibly will never be completed. Applicant should be required to submit the plan without PSP for FERC's licensing consideration.*

**UDWRe Response:**

FERC does not reject a license application, or any part of it, on the basis that the proposed project, or one of its developments, may face financing challenges. To do so would be to prejudge the application. Moreover, under well-established precedent, project economics is just one of many factors that FERC considers in determining whether to issue a license for a hydroelectric project. Under FERC's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*, 72 FERC ¶ 61,027 (1995) FERC uses current costs to compare the costs of the project and likely alternative power, with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date in order to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license. Financial risk associated with the project is the licensee applicant's responsibility; it alone must decide whether to accept the proffered license and any financial risk that entails. To ensure that the public interest is protected in this regard, no licensee may commence project construction until it files and receives FERC approval of documentation, prepared in accordance with generally accepted accounting principles and signed by an independent certified public accountant, showing that it has acquired the funds, or commitment of funds, necessary to construct the project in accordance with the license.

## **Chapter 4 Comments:**

**BLM Comment 408:**

*(Section 4.1, Page 4-1)*

*Regarding Stakeholder consultation, this is a fundamental flaw of the Lake Powell Pipeline environmental process and Section 106 process. Applicants cannot initiate consultation for the DOI agencies with the SHPO and the tribes. This should be re-written so that it is clear that no consultations were initiated on behalf of the DOI agencies by the applicant.*

**UDWRe Response:**

**Your comment has been noted. The text has been revised to address the comment.**



**BLM Comment 409:**

*(Section 4.1, Page 4-1)*

*Recommend using tribes' proper federally recognized names.*

**UDWRe Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 1:**

*(Section 4.1)*

*The UBWR states that it initiated consultation with Indian tribes in March 2008, including the Kaibab Tribe, with the filing of the Notice of Intent and Preliminary Application Document, and that it consulted with stakeholders throughout the ILP. PLP at 4-1 to -3 & tbl. 4-1. The UBWR also lists various documents from the ILP process to date, id. at 4-3 to -4 & tbl. 4-2, and promises to provide "(a) complete summary of consultation, coordination and corresponding documentation" with its license application. Id. at 4-3.*

*The UBWR continues to defer compliance with its obligation to provide the details of its consultations with Indian tribes, including evidence that it actually considered and took direct action to address tribal concerns following those consultations. This information is also lacking in most if not all of the revised draft study reports. The Kaibab Tribe must be provided an opportunity to review and comment on the UBWR's comprehensive summary of tribal consultations before its inclusion in the license application, but without specific details it is unable to provide such comments.*

**UDWRe Response:**

**Your comment has been noted.**

## **Chapter 5 Comments:**

### ***Geology and Soils:***

**FERC Comment 9:**

*In the license application, provide a table identifying the location, estimated length, and rock quality for all proposed project tunnels discussed in section 5.3.1.1 of the PLP. Also identify potential stabilization methods for tunneling through weak/fractured rock and discuss the impacts associated with tunneling and tunnel stabilization and mitigation measures.*

**UDWRe Response:**

**A summary discussion has been provided in which identifies the locations, estimated lengths, and (as supported by available data) rock quality for the project tunnels and shafts discussed in Section 5.3.1.1. Drilling at the LPP Intake Pump Station occurred at and near the proposed facility, and the deepest borehole extended to a depth of approximately 477 feet, comparable to the anticipated depth of approximately 392 feet**

for the proposed shaft or shafts. Drilling at the Hurricane Cliffs Forebay and Afterbay sites was limited to drilling at the proposed dams for the forebay and afterbay facilities and not directly at the shaft location. Drilling at the forebay extended to a maximum borehole depth of 238 feet at the South Dam and did not extend to the anticipated maximum depth of the proposed surge shaft, which would have been approximately 1,000 feet. Stabilization methods for weak or fractured rock, and impacts to geologic resources associated with tunneling and stabilization, have been identified in Section 5.3.1.1.

**FERC Comment 10:**

*The Hurricane Fault is referenced throughout the PLP, but the location and other relevant information are not shown in the table 5-3. Include this information in the license application.*

**UDWRe Response:**

**Hurricane fault has been added to Table 5-3 and relevant information has been provided.**

**FERC Comment 11:**

*The license application should include a legend to define rock characteristic abbreviations that are shown in table 5-4 of the PLP. Also provide an estimated range of unconfined compressive strength for each rock strength abbreviation in terms of pounds per square inch or other similar measures.*

**UDWRe Response:**

**A legend has been added to Table 5-4 that will define rock characteristic abbreviations. Unconfined compressive strength will be estimated within a range of typical values based on field hardness using the National Engineering Handbook, Part 631, Geology, Table 4-3. These estimated values will be added to Table 5-4.**

**FERC Comment 12:**

*The license application should include a discussion of permits required (if any) for spoils disposal, borrow excavation, and/or spoils and borrow hauling.*

**UDWRe Response:**

**Construction activities, including the pipeline, pump stations, hydro facilities, reservoirs, transmission lines, excavation, hauling, spoils disposal, and other features will require a Right of Way grant from the BLM as specified in 43 CFR Parts 2800 and 2880 and in Sections 501 through 506 of the Federal Lands Policy Management Act of 1976, Amended October 2001 (FLPMA). Permits for excavation, hauling, and disposal of spoils may be granted by BLM under Section 302 of FLPMA. As required under 43 CFR Subtitle B.1.429, a Use Authorization may be required from the U.S. Bureau of Reclamation for excavation and construction activities and removal of spoils from the Lake Powell Intake Structure site. The Utah Department of Transportation and the Arizona Department of Transportation may both require truck haul permits when using public roadways to transport excavated materials. These would be the responsibility of the individual**

**construction contractors. A discussion of permit requirements for excavation, hauling and disposal of spoils has been included in the text.**

**FERC Comment 13:**

*Sections 5.3.1.1.9, 5.3.1.2.4.7, and 5.3.1.2.6.1 of the PLP quantify earthen materials generated and required for the proposed project pipelines, penstocks, and tunnels. In the license application, quantify disturbed areas and provide volume estimates for this construction work.*

**UDWRe Response:**

**Disturbed areas have been quantified (square feet of disturbance) and added to the text for the proposed project pipelines, penstocks, and tunnels. Estimated volumes of excavated material, backfill, bedding, and spoils has been added to the text.**

**FERC Comment 14:**

*Section 5.3.1.1.10 of the PLP identifies a seepage volume of up to 1,500 gallons per minute during intake shaft construction and notes that this inflow would be collected in sumps, pumped to the surface, held in portable tanks, and disposed of in Lake Powell. By extrapolating this value, the sump water control system would need to process about 90,000 gallons per hour (roughly the size of a 30-foot-diameter x 20-foot-tall tank) during tunneling operations once drilling is below the lake level. This is a substantial volume and tunneling could extend for months. However, section 5.3.1.2.2.8 of the PLP states: “The groundwater infiltration rates would be manageable during the shaft, tunnel, and other underground excavation work” and references relatively low transmissivity. This statement appears to contradict the high values noted in section 5.3.1.1.10. This apparent inconsistency needs to be addressed in the license application, which should include a more detailed description of how you propose to manage seepage flows.*

**UDWRe Response:**

**The dewatering estimates provided in Section 5.3.1.1.10 are conservative and probably high; nonetheless, there is a reasonable possibility that inflows requiring discharge during construction dewatering will require substantial effort to manage. Discharge to Lake Powell may not be permitted; it is anticipated that discharges from construction dewatering will need to be conveyed to the emergency spillway at Glen Canyon Dam and discharged on the downstream side of the dam. A series of settling trenches or portable settling tanks may be required to allow sediment from the dewatering to settle before discharging. As noted in the response to FERC Comment 15 below, a blind bore shaft drilling method generally does not require much removal of fluids because the reverse circulation component of the blind bore method returns most of the fluids to the flooded shaft after settling the heavier solids. The treatment of fluids during blind bore drilling is discussed in Response to FERC Comment 26 below. Complete dewatering of the shafts may be required during shaft liner installation. Dewatering will be required for use of micro-tunnel boring machines (MTBM) during construction of the lateral tunnels into Lake Powell. Dewatering will be required for tunneling and blasting during construction of the pump forebay chamber and forebay connection tunnel. For activities other than blind bore drilling of shafts, dewatering will require a combination of dewatering wells and pumping from the shafts. A discussion of dewatering discharge management has been added to the text.**

**FERC Comment 15:**

*Section 5.3.1.1.10 of the PLP describes the use of dewatering/extraction wells in lieu of sump pumps for intake shaft dewatering. The same paragraph notes that the strata composition and the nature of rock mass fractures would likely make well dewatering impractical. Section 3.1.1.1.1 states that vertical intake shafts would be constructed using blind-bore techniques. Dewatering is usually not required for this type of drilling because the shafts are typically inundated to create proper circulation of drill cuttings. Because sump removal of seepage water via dewatering wells or a sump would be problematic (see previous discussion) and proposed shaft drilling methods may not require dewatering, you should revise this discussion in the license application to better reflect the likely method for intake shaft drilling or include a description of the process of blind-bore methods in relationship to water management. Any discussion in the license application regarding information presented in section 5.3.4.2.2.2 of the PLP should also be revised to identify effects related to the drilling methods described in 3.1.1.1 and include any mitigation measures.*

**UDWRe Response:**

**Please note that Section 5.3.1.1.10 does not state that dewatering wells would be an impractical method of dewatering, rather that they would probably be used in tandem with pumping from shafts and tunnels. Section 5.3.1.1.10 has been revised to include a discussion of water management during construction of the Intake Structure shaft and tunnels, with greater consideration given to the blind bore shaft drilling method. It is anticipated that the blind bore shaft drilling method will generate drill cuttings and some drilling fluids, and settling tanks or trenches will be required to settle heavier solids prior to recirculating the fluids. Management and disposal of drill cuttings and drilling muds will consist of collection of the cuttings and muds and transporting them to an authorized landfill or other waste disposal facility. Section 5.3.4.2.2.2 has been revised to identify effects and mitigation related to blind bore shaft drilling methods. More information on treatment of drilling fluids is addressed in Response to FERC Comment 26 below.**

**FERC Comment 16:**

*Section 5.3.1.10 of the PLP identifies seepage potential and construction dewatering needs for the proposed project intake shaft. Section 5.3.1.2.2.9 notes the tunnel in the Hurricane Cliffs is unlikely to hit groundwater. In the license application, quantify seepage inflow and construction dewatering rates, if any, for all other proposed project tunnels.*

**UDWRe Response:**

**The only remaining tunnel is the tunnel section just downstream of the HCH Afterbay, a segment of the alignment between the HCH Afterbay and Sand Hollow Reservoir. At the HCH Afterbay, depth to groundwater was not encountered in test boreholes, including one borehole which extended to a depth of 271 feet, at bottom elevation 3,404.7 feet MSL. The tunnel section begins at the HCH Afterbay with a pipe invert at elevation 3,485 feet MSL. The tunnel section extends at a nearly flat slope for approximately 500 feet through a butte before exiting at nearly the same elevation west of the butte. The tunnel would be well above the observed depth to groundwater, therefore little, if any, seepage dewatering would be required during construction of the tunnel. A discussion of seepage in the tunnel section downstream of the HCH Afterbay has been added to the text.**

**FERC Comment 17:**

*Sections 5.3.1.1.10 and 5.3.1.1.11 reference field borings, pit tests, laboratory tests and hydrogeologic analyses performed at the intake pump station and Hurricane Cliffs forebay and afterbay sites. Include, as an appendix or attachment to the license application, the investigation program reports and all field and laboratory logs/data obtained from the investigations, including groundwater pump tests data and results and refer to this information in the text of the license application.*

**UDWRe Response:**

**Drilling and testing at the HCH Forebay and Afterbay sites is documented in a report prepared by RB&G Engineering, Inc. (RB&G). The citation for this report is as follows:**

**RB&G Engineering, Inc. 2010. Hurricane Cliffs Hydropower Pump Storage Project Forebay and Afterbay Reservoir Sites. Prepared for the Washington County Water Conservancy District, March 2010.**

**The report has been provided as an appendix to the text.**

**FERC Comment 18:**

*Section 5.3.1.2.1.2 of the PLP notes the liquefaction potential of saturated sandy soils beneath the pipeline. Section 5.3.1.2.3.2 states this condition may be encountered at the Paria Creek crossing but “proper design and construction would minimize risk effects.” In the license application, quantify subsidence potential at this location based on the projected peak ground acceleration estimates of subsurface conditions, and mitigations measures, if any, that would be applied to this and other similar crossings.*

**UDWRe Response:**

**Based on the USGS 2014 geologic hazards map showing 2 percent probability of exceedance in 50 years, the PGA for the vicinity of the Paria Creek crossing is approximately 0.2g. The 2014 USGS map is found at the following website:**  
<http://earthquake.usgs.gov/hazards/products/conterminous/2014/2014pga2pct.pdf>

**The available subsurface data for Paria Creek are insufficient to quantify liquefaction potential and subsidence. Drilling and subsurface sampling was not allowed on most sites administered by BLM. Refer to response to FERC Comment 4.**

**FERC Comment 19:**

*Sections 5.3.1.2.2.3 and 5.3.1.3.2 of the PLP state stabilization measures or rock removal may be needed to support construction activities. Identify possible stabilization methods and their potential impacts.*

**UDWRe Response:**

**Stabilization methods are beyond the scope of this evaluation. Additional evaluation of rock and slope stabilization methods and procedures would be determined during a more detailed evaluation of geotechnical and geologic hazard issues as part of the detailed design phase of the project. Stabilization methods would be identified during the detailed design phase as well.**

**FERC Comment 20:**

*In the PLP, you refer to using excavated, crushed rock for pipe bedding material. Typically, we expect that only medium hard and better rock would meet rock durability requirements (measured as abrasion) for pipe bedding aggregate. In the license application, identify how much of the excavated rock would be suitable (in terms of aggregate durability) for use as a base beneath the pipes.*

**UDWRe Response:**

**Refer to the response to FERC Comment 4. A detailed evaluation of the materials to be encountered during excavation of most of the pipeline was not possible during the environmental baseline study because BLM did not authorize subsurface investigations along most of the proposed alignments on lands administered by BLM, which represents most of the pipeline alignment alternatives. For the purposes of this evaluation, it has been assumed that suitable material for pipe bedding would be available from the excavated rock and soil. This has been identified in the license application.**

**FERC Comment 21:**

*Rock excavation quantities are provided in sections 5.3.1.1.9, 5.3.1.2.4.7, and 5.3.1.2.6.1 of the PLP. You propose to remove rock by using a combination of traditional equipment excavation, ripping, and blasting. In the license application, estimate the quantities or percent of rock excavation that would be done by each method and relate the quantities to rock type and quality. Discuss the impacts of and mitigation measures, if any, for each method.*

**UDWRe Response:**

**Relative percentages of rock and soil were estimated based on field observations, geologic maps, and assumptions about depths to bedrock. The primary potential for error is the assumption of bedrock depth. Because no drilling could be performed except at the Intake Pump Station and the Hurricane Cliffs area, depths to bedrock could not be accurately quantified. Using the assumption that bedrock would be encountered at approximately 5 feet on average in areas where soil cover is expected to be thin, rock and soil excavation quantities were estimated. The estimates by each method have been provided in the text.**

**FERC Comment 22:**

*The PLP notes that the proposed pipeline through Cockscomb Cut would be buried immediately adjacent to the north side of Highway 89 and would cross under the highway at the west end. For about 700 to 800 feet along the cut, there appears to be less than a 10-foot distance from the base of the rock cut to the edge of pavement. In the license application, provide a conceptual cross-section showing pipeline installation at this location. Also provide a more detailed discussion of*



*installation methods for the pipeline and analyze the impacts and any proposed mitigation measures for your alternatives, including excavating into the existing steep road cut on the north side of the highway and construction under the paved portions of the highway.*

**UDWRe Response:**

**Cross-sections that include construction activities through the Cockscomb Cut area were developed as part of the conceptual design. These sections are provided in Appendix A to Final Study Report 04 – Geology and Soil Resources. The cross-sections are provided for 13 stations between Project Station 1689+80 and 1734+15 (a total alignment length of 4,435 feet) and show the approach, passage through the cut, highway crossing, and exit from the cut. Also included in Appendix A to Final Study Report 04 – Geology and Soil Resources is Table A-1, providing calculated cross-sectional areas of materials that would be removed from the cut slopes to accommodate the pipeline, as well as the estimated total volume of material that would be removed. Potential slope modifications to the north cut slope are shown in some of the cross sections. Slope modifications would probably require controlled drill and blast methods (common to the highway construction industry). Rock material suitable for crushing and use as pipe bedding will be processed and used for that purpose. The remaining material will be used as backfill and/or spread as spoils along the ROW outside of the cut area.**

**Because the Utah Department of Transportation would be unlikely to approve an open cut highway crossing in this reach, the pipeline crossing under Highway 89 in the Cockscomb Cut would either be bored and jacked, or microtunneled with a casing pipe. The primary factor controlling this choice is whether groundwater is present and, if so, how effectively it can be dewatered. Groundwater is not expected to be encountered in the Cockscomb Cut.**

**Bore and jack tunneling uses an open-shield cutter head with a rotary cutter bar or a wheel excavator. This method is limited to use above the water table, so if saturated conditions are encountered during installation and cannot be effectively dewatered, microtunneling would be used. Microtunneling uses a remote-controlled, laser-guided boring machine that uses a closed-face tunneling head that can be used in saturated conditions. Both methods would require temporary excavation of a jacking pit on one side of the crossing and a receiving pit on the other side. The jacking pit would be 30 feet long or more, 15 feet wide and seven to eight feet deep. The receiving pit would be 15 feet long, 12 feet wide and seven to eight feet deep. In the unexpected event that groundwater is encountered, the pits would be dewatered. The pits would be backfilled and compacted upon completion of the crossing. Any groundwater that is dewatered would be pumped out of the Cockscomb Cut and land-applied on soil, away from surface water, using sprinklers or perforated pipe. The text has been modified to incorporate this information.**

**FERC Comment 23:**

*You identify potential rockfall hazards in tables 5-5 through 5-8 of the PLP for various pipeline locations. In section 5.3.1.2.3.3, you state: “because the pipeline would be buried, slope failures are not expected to affect the pipeline operations or maintenance.” In the license application, discuss the potential for rockfall to affect the buried pipeline during operation. Verify that the proposed minimum 5 feet of cover provided above the pipeline would be sufficient to provide protect the pipeline from falling rock, based on proximity, slope, and the distance that rock*



*masses could fall to the pipeline. Alternately, note that cover depth would be evaluated during design to ensure that the pipeline would be protected from rockfall hazards.*

**UDWRe Response:**

**Currently the proposed minimum cover for the buried pipeline is 3 feet. The cover depth will be evaluated during the detailed design phase of the project to verify that the pipeline would be adequately protected in the event of a rockfall. This has been stated in the text.**

**FERC Comment 24:**

*Sections 5.3.2.2.8 and 5.3.2.2.9 note the suitability of subsurface conditions for shafts, tunnels, and other underground features. In the license application, provide a similar suitability assessment of subsurface soil and rock for founding surface structures at all of the proposed facilities.*

**UDWRe Response:**

**Subsurface investigations at the Intake and Hurricane Cliffs Hydro Station Forebay and Afterbay locations determined that conditions are suitable for foundations for surface structures at these locations. Detailed design of these structures will include any foundation preparations necessary to protect the facilities from settling and other potential structural damage. It is anticipated that additional subsurface investigations at these locations will be required to more fully characterize conditions for design. Subsurface investigations at other surface facilities were not performed because BLM did not authorize subsurface investigations. Refer to response to FERC Comment 4. Subsurface characterization at the locations of proposed facilities and along the pipeline alignment of the selected alternative will be performed prior to the detailed design. This has been added to the text.**

**FERC Comment 25:**

*In the license application, expand the discussion of the potential loss of the pipeline from scour/bed erosion during flood conditions where the pipeline would cross rivers and washes. Section 5.3.3.3 notes long-term mitigation measures, including encasing the pipeline in concrete through stream crossings, installing downstream grade control structures, and using rock rip rap armoring. In the license application, include a table noting the wash and stream crossing locations that would likely require scour control.*

**UDWRe Response:**

**All stream crossing locations would require at least some degree of scour protection. A table has not been included in the document.**

***Water Resources:***

**FERC Comment 26:**

*Section 5.3.4.2.2.2 of the PLP does not sufficiently address water quality challenges resulting from shaft dewatering at the intake pump station during construction. In the license application,*

*provide information about the expected size of settling tanks, based on the time required to meet water quality requirements; water treatment methods to manage fluids contaminated by the drilling process; and water disposal methods. Also discuss the effects on water quality and present your proposed mitigation measures, if any. If these waters are to be returned to Lake Powell, confirm that the controlling authorities would allow the processed seepage groundwater that is extracted from drilling operations to be placed into the lake.*

**UDWRe Response:**

The blind bore reverse circulation drilling method will minimize the amount of fluids that will need to be discharged during drilling of the shafts. Refer to the response to FERC Comment 15. It is anticipated that fluids circulated during shaft and tunnel construction will discharge into one end of a trench or rectangular tank. Using typical settling velocities for particles in water (Fifield, J. 2001. Designing for Effective Sediment and Erosion Control on Construction Sites. Forester Press, Santa Barbara, CA) and assuming a particle size of very fine sand (from sandstone), a settling velocity ( $V_s$ ) of approximately 0.02 ft/sec can be expected. If the tank depth is assumed to be 4 ft deep, a residence time ( $T_r$ ) of at least 200 seconds would be required to settle a particle at the water surface. For a conservatively high estimate of 1500 gpm discharge and assuming a tank width of 8 feet (a practical width for transport by truck), the velocity of linear flow from one end of the tank is:

$$V_f = Q/A = (1500 \text{ gal/min})(1 \text{ ft}^3/7.48 \text{ gal})(1 \text{ min}/60 \text{ sec})/((8 \text{ ft})(4 \text{ ft})) = 0.1 \text{ ft/sec}$$

The minimum length of the tank would need to be:

$$L = (V_f)(T_r) = (0.1 \text{ ft/sec})(200 \text{ sec}) = 20 \text{ ft}$$

Therefore, a settling tank would be about 8 ft x 20 ft x 4 ft deep to remove very fine sand particles. It may be advisable to have two tanks in series, with the decant water from the first tank flowing from the top of the water column into the second tank. Baffles at the end of each tank would help to distribute the flow velocity evenly across the width of the tank. If drilling mud is used, the required residence time would be much longer or a deflocculant would be required.

Once clarified, water that is not recirculated would be pumped to the Glen Canyon Dam spillway and discharged on the downstream side of the dam away from Lake Powell into the Colorado River. Discharge would be permitted under a De Minimis General Permit through the Arizona Department of Environmental Quality. Discharged water quality would need to meet standards defined by ADEQ. If no drilling fluid additives are used, the discharge constituent of concern would probably be suspended solids, which would need to meet requirements defined by ADEQ under the terms of the permit. If additives are used, treatment and discharge constituents of concern will be based on the nature of the additives.

A discussion of dewatering discharge has been added to the text.

**FERC Comment 27:**

*Section 5.3.4.2.2.3 of the PLP notes your proposal to use overflow detention basins at the booster pump and hydro generation sites, but it does not mention surface water drainage/sediment*

*control at the Lake Powell pump station. Section 5.3.4.3 addresses only construction-related measures, and figure 3-4 does not show drainage/sediment control at the facility. Grade contours of the site show potentially substantial offsite drainage through the operational facility as well as surface water draining directly into Lake Powell. In the license application, discuss how drainage/sediment would be controlled during operations at the facility and discuss possible erosion effects on the cliff face from surface water drainage.*

**UDWRe Response:**

**The Intake Pump Station site configuration is too small for a typical surface water drainage basin that would manage surface runoff from the facilities and from upslope. Rather than collect drainage in a conventional drainage basin, runoff would be routed into one or both of the shafts. The shafts will be lined and will not interact with groundwater, and the shafts will act as a settling basin for sediments. Settled sediments will periodically be vacuumed out of the bottom of the shafts. The only runoff over the cliff into Lake Powell will be the undisturbed surface between the Intake Pump Station and the cliff edge. This area currently drains over the cliff into the lake, and the pump station facility will have the net effect of reducing runoff into the lake because runoff upstream will be captured and routed into the shafts. A discussion has been added to Section 5.3.4.2.2.3.**

**FERC Comment 28:**

*Sections 5.3.4.2.2.1 and 5.3.5.2.2.1 of the PLP discuss the construction effects from proposed pipeline and penstock trench excavation in relationship to near surface groundwater. Table 5-75 notes a high probability of encountering groundwater at four stream channel crossings. These sections note that construction of open-cut crossings in locations with shallow groundwater may require trench dewatering, drawdown, and/or surface discharge. Provide estimated maximum flow rates for such operations and any anticipated effects from dewatering these sites.*

**UDWRe Response:**

**Reliable estimates of maximum flowrates are not possible because BLM did not allow collection of subsurface data for most of the alignment alternatives on BLM-administered land, including all stream crossings identified in the Groundwater Resources study. Therefore the subsurface materials could not be adequately characterized to estimate inflow during construction. Such estimates would be addressed as a consequence of more detailed studies during detailed design.**

**FERC Comment 29:**

*Section 5.3.5.2.2.1 of the PLP describes the possibility of shallow groundwater at the Kane Beds, but this location is not presented as a stream channel crossing in table 5-75. Table 5-75 of the PLP also notes a crossing at Kanab Creek and describes the location as having surface flows in all seasons with groundwater near the surface. However, this section does not include Kanab Creek as a likely location for shallow groundwater. Address these discrepancies in the license application.*

**UDWRe Response:**

Cane Beds (also spelled Kane Beds) is an area just south of Colorado City, Arizona. A normally-dry wash crosses under Highway 389 near the pipeline alignment. Depth to groundwater at this location is not known, but because it is within a few miles of Short Creek and at a topographic low, there is a possibility that groundwater could be encountered when the water table is high. This is unlikely, however, and there is no “crossing” of a specific stream channel. The crossing at Kanab Creek has been added to Section 5.3.5.2.2.1 as a likely location for shallow groundwater.

**FERC Comment 30:**

*Although section 5.3.3.1.3 discusses the existing return flows and return flow patterns in the Virgin River Basin, it is not clear whether return flows from the proposed project would enter the St. George Wastewater Treatment Plant. In the license application, include a table providing the return flow (in cfs) as demand for Lake Powell water increases and a figure showing: (1) the storage location for water from Lake Powell before it is used for public consumption, and (2) the return flow discharge locations along the Virgin River for water that would not pass through the St. George Wastewater Treatment Plant.*

**UDWRe Response:**

Return flows from the LPP Project would occur as sewered flows entering the St. George WWTP and as non-sewered flows resulting from outdoor irrigation. The Virgin River Daily Simulation Model (VRDSM) run by UDWRe to simulate the inflows, outflows, return flows and water consumption includes tables showing the return flows distributed throughout the St. George metropolitan area as demand for the Lake Powell water increases. The storage location for water from Lake Powell before it is used for public consumption is Sand Hollow Reservoir, which is shown in numerous figures within the license application. In addition to return flow discharge to the Virgin River from the St. George WWTP, reuse water is distributed to golf courses, parks and cemeteries throughout the St. George metropolitan area, provided to the Shivwits Band of Indians, used by irrigators, and distributed through secondary water systems for outdoor use only. The reuse water applied as irrigation becomes part of the non-sewered return flow that occurs throughout the St. George metropolitan area, much the same way as non-point discharges occur along a river and throughout a drainage basin. The non-sewered return flows from residential, commercial, institutional and industrial/stockwater use of M&I water also occur throughout the St. George metropolitan area in the same way as the secondary water, and this would continue with the LPP Project.

**FERC Comment 31:**

*Table 5-71 in section 5.3.4.1.6 of the PLP summarizes water quality data collected from Sand Hollow reservoir. The table shows three occasions when low dissolved oxygen (DO) levels were recorded; the remainder of the values show DO at or above saturation levels. The table does not indicate the depth in the reservoir where the DO samples were taken or explain why DO concentrations were high in the majority of the samples collected or low in the three samples. Explain these discrepancies in the license application.*

**UDWRe Response:**

All samples reported in Table 5-71 were collected at a reservoir depth of 2 to 8 ft, as reported by the Assessment of Managed Aquifer Recharge at Sand Hollow Reservoir, Washington County, Utah, Updated to Conditions through 2007. Additional data recording DO and reservoir depth are available for the sampling period 06/2006 to 02/2008. These data has been added to the text. Measured DO levels are susceptible to variation resulting from turbulence at the air-water interface, slow equilibration after a change in atmospheric conditions, algal photosynthetic activity, as well as possible measurement discrepancies associated with electrochemical type instruments. For reference, saturation DO levels have an inverse relationship with water temperature, and a proportional relationship with hydrostatic pressure experienced with increasing depth.

**FERC Comment 32:**

*The PLP includes very little DO data or analysis of potential project effects on DO. We note that while the PLP includes the Arizona State DO standard, there is no discussion or analysis of Utah State DO standards. In the license application, include the analysis of proposed project effects on water quality, provide available DO data for waters that the proposed project would affect, and describe the Utah DO standard and whether proposed project waters currently meet DO standards for both states.*

**UDWRe Response:**

**UAC R317-2-14 Numeric Criteria Table 2.14.2 Numeric Criteria for Aquatic Wildlife provides minimum DO criteria based on Beneficial Use Protection Classification. For reference, these criteria will be added to Tables 5-29 Numeric Water Quality Criteria for Kanab Creek, 5-34 Numeric Criteria for Paria River, and 5-39 Numeric Criteria for Virgin River (Below Quail Creek Diversion).**

**However, the only potential effect on the waters of Utah would be at the Sand Hollow Reservoir. Additional water quality data (with DO) and a discussion of the effects of Lake Powell water on Sand Hollow Reservoir water DO has been added to the text.**

**FERC Comment 33:**

*The PLP provides no analysis of how construction of the proposed project would affect any water quality parameters. The PLP indicates that the Bureau of Reclamation conducted some modeling, but it presents only general results. Ensure that the license application presents the results of the water quality modeling and any other analysis conducted by the applicant, and include a detailed analysis of effects so that we have sufficient information to complete our environmental review.*

**UDWRe Response:**

**Section 5.3.4.2 presents the available results from Bureau of Reclamation modeling, which was conducted for temperature, TDS, DO, and salinity only in the upstream resources (Lake Powell, Glen Canyon Dam releases to the Colorado River). Water quality impacts associated with sediment transport during construction were not modeled, but rather analyzed qualitatively for impacts and identification of corresponding BMPs. Water quality data, including additional parameters collected at a depth profile, are available for Sand Hollow Reservoir for the period 06/2006 to 02/2008. The text has been revised to**

reflect updated model assumptions and results for upstream resources. However, further modeling for additional water quality parameters or sediment transport during construction is not planned.

**FERC Comment 34:**

*Sections 5.3.3.2.3.2 and 5.3.3.2.3.3 of the PLP present only a cursory discussion of the effects of Lake Powell water transfer on Quail Creek reservoir and Sand Hollow reservoir storage. Ensure the effects of the proposed project on storage in Quail Creek and Sand Hollow reservoirs are clearly presented in the final study report and license application.*

**UDWRe Response:**

Section 5.3.2.1.4.1 describes the Quail Creek and Sand Hollow reservoirs operation as a combined system, with interconnection for water transfer in either direction between the reservoirs. Sections 5.3.2.2.4 and 5.3.2.5 discuss the effects of LPP water transfer under the No Lake Powell Water Alternative. The system would be hardened, with natural water exchange resulting from agriculture, outdoor water use, and maintenance of in stream flows and reservoir levels all removed from the cycle and reservoir water only used for indoor demand. Water quality resulting from this condition was not modeled. However, hardening the system to natural cycling is anticipated to increase temperature and as a result reduce DO, have a concentrating effect on TDS and metals, reduce aquifer recharge, and limit flows available to aquatic and aquatic-dependent species. A more detailed discussion has been provided in the text.

***Fish and Aquatic Resources:***

**FERC Comment 35:**

*Section 5.3.6.1 (Affected Environment) and Section 5.3.6.2 (Environmental Effects) do not follow the Commission's Guidelines for Preparing Environmental Documents. For example, the Affected Environment section, which should describe existing aquatic resources in the project area, includes discussion of the proposed project design and invasive species management, with limited information on fish species that occur in project-affected waters. Likewise, your Environmental Effects section does not describe in sufficient detail how the proposed project would affect aquatic resources or how your proposed mitigation measures would reduce projects effects on fish species. Revise the Affected Environment and Environmental Effects sections to follow the Commission's Guidelines for Preparing Environmental Documents (see comment 9).*

**UDWRe Response:**

The Lake Powell water introduced to Quail Creek or Sand Hollow reservoirs would be treated at the source to be free of invasive aquatic organisms. This can include chemical treating and fine screening. The physical and chemical quality of the Colorado River is generally better or as good as the local water stored in either reservoir. The water in the pipeline system would be extracted from a well-oxygenated and well-mixed source in Lake Powell within 100 feet of the surface. The water in the pipeline would be subject to re-aeration at each booster pump station and the forebay of Sand Hollow Reservoir prior to its introduction the next pipeline or penstock segment. The water temperature will be essentially the same as at Lake Powell (with some ground effect warming) and would be subsurface-mixed with the terminal reservoir water.



**FERC Comment 36:**

*Section 5.3.6.1 of the PLP does not include relevant information on the species assemblage in Lake Powell and Sand Hollow Reservoir and provides inadequate descriptions of the aquatic resources in the vicinity of each proposed crossing of perennial streams — Paria River, Kanab Creek, and Virgin River. In the license application, provide available information on fish species abundance, distribution, and stocking records for Lake Powell and Sand Hollow Reservoir, as well as detailed descriptions of aquatic habitat at each proposed stream-pipeline crossing.*

**UDWRe Response:**

**The available information on fish species in Lake Powell and Sand Hollow Reservoir was presented in Final Study Report 03 - Aquatic Resources.**

**The Paria River, Kanab Creek and the Virgin River have limited aquatic resource values. The Paria River and Kanab Creek, while listed as perennial in some documentations, are seasonally ephemeral in the project area and would be dry or have little flow during the expected period of construction for the LPP Project crossing installations. The Virgin River can also have insignificant flow and poor water quality conditions in the summer/fall irrigation season when any in-stream construction activities would be likely to occur.**

**There are no definitive estimates on abundance of fish or other aquatic species in Lake Powell or Sand Hollow Reservoir. Chapter 3 of Final Study Report 02 – Aquatic Resources provides the information on significant species and distribution that is available. There are no available records regarding historic stocking of hatchery fish in Lake Powell but Sand Hollow Reservoir is stocked with trout for sports fishing by the State of Utah; however, unless an emergency release of stored water to the Virgin River (Refer to Chapter 3 of Final Study Report 02 – Aquatic Resources) to maintain minimal flow occurs, no interaction of Sand Hollow Reservoir water with Lake Powell water could occur.**

**FERC Comment 37:**

*Section 5.3.6.2 does not adequately analyze potential effects of the proposed project on fish entrainment at the proposed Lake Powell water intakes, and the effects of the proposed pipeline crossings on each perennial stream. In the license application, provide an analysis of the effects of proposed project fish entrainment on the fish community in Lake Powell, and effects of perennial stream crossings on riverine fisheries.*

**UDWRe Response:**

**The proposed LPP pipeline crossings of the Paria River and Kanab Creek would have no measurable effect on any fish species. Construction activity in the summer/fall periods would occur when the Kanab Creek and Paria River are essentially dry. Any minor flows would be diverted during pipeline crossing construction. Any groundwater encountered during pipeline construction would be settled to remove settleable solids before being returned to any stream or be allowed to infiltrate when no instream flow occurs.**



**The Lake Powell intake would be designed to allow a 0.4 feet per second velocity at the intake screen following the USACE guidelines. At this velocity, any free swimming species of fish can escape entrainment based upon extensive study by USACE.**

**FERC Comment 38:**

*The proposed project has the potential to affect aquatic resources within Sand Hollow and Quail Creek reservoirs due to the proposed transfer of water. However, in the PLP, you do not discuss the potential effects of transferring Lake Powell water on aquatic resources within these reservoirs. In the final license application, include a discussion of these potential effects.*

**UDWRe Response:**

**The applicant does not anticipate that mixing Lake Powell water with Sand Hollow and Quail Creek reservoir water would have any significant or negative effect on the aquatic resources of either storage reservoir. As discussed in the Final Study Report 02 - Aquatic Resources, the Lake Powell water would be treated to control invasive species at the source and the general chemical and physical characteristics of the current reservoir waters and that of Lake Powell water would be compatible.**

**FERC Comment 39:**

*In section 5.3.3.3.1 of the PLP, you list several measures to protect streams from short-term construction effects. In the license application, clarify whether these measures are considered BMPs.*

**UDWRe Response:**

**Best management construction practices measures will be incorporated to protect streams from short-term construction efforts. BMPs, including plans of development, initial inventories of sediment control measures, dewatering, stormwater and erosion control during construction are listed in Chapter 3, Section 3.1.3.2 and Chapter 5, Section 5.3.4.3. Section 5.3.3.3.1 has been revised to discuss long term protection and mitigation measures.**

***Terrestrial Resources:***

**FERC Comment 40:**

*Although sections 5.3.8.1 through 5.3.8.1.2 of the PLP describe 25 vegetation communities within the proposed project area, 15 within the Colorado Plateau Region, and 10 within the Mohave Desert Region, these sections only estimate the total amount of vegetation disturbance within the Colorado Plateau and Mohave Desert without distinguishing between types of plant communities. Additionally, the PLP does not quantify temporary disturbance (or areas where revegetation would occur) and permanent disturbance (or areas where proposed project facilities would preclude revegetation establishment following construction). To support an analysis of proposed project effects and proposed mitigation measures on vegetation resources, include in the license application a breakdown by acres of permanent and temporary effects on vegetation by project facility or feature within each of the 25 vegetation communities, as described in the PLP.*

**UDWRe Response:**

Please see Table 5-79 for total number of acres disturbed within each type of vegetation community in the Colorado Plateau and Mojave Desert regions.

The following table and text were added in section 5.3.8.2.1 Proposed Action to address temporary and permanent disturbance acres by vegetation community in each region: The Proposed Action (Intake System, Water Conveyance System, Hydro System and KCWCD System) construction would directly affect vegetation communities covering 4,102 in the ROW. Temporary and permanent effects on vegetation communities in both the Colorado Plateau and Mojave Desert regions are quantified in Table 5-82. The Proposed Action would directly affect a total of 3,484 acres in the Colorado Plateau Ecological Region; however, only 37% of the disturbance would be permanent The Proposed Action construction would directly affect vegetation communities covering 618 acres in the Mojave Desert Ecological Region, half of which would be permanent disturbance.

Table 5-82.		
Temporary and Permanent Disturbance Acres by Vegetation Community - Proposed Action		
Vegetation Community Type	Temporary (Acres)	Permanent (Acres)
<b>Colorado Plateau Ecological System</b>		
Colorado Plateau Active and Stabilized Dune	197.0	38.8
Colorado Plateau Big Sagebrush Shrubland	371.5	258.1
Colorado Plateau Blackbrush-Mormon-tea Shrubland	348.3	147.1
Colorado Plateau Grassland	85.8	38.4
Colorado Plateau Greasewood Flat	4.7	4.8
Colorado Plateau Gypsum Badlands	24.1	6.6
Colorado Plateau Juniper Savanna	6.6	1.1
Colorado Plateau Lower Montane Riparian Woodland and Shrubland	9.4	5.6
Colorado Plateau Mixed Bedrock Canyon and Tableland	174.7	25.8
Colorado Plateau Mixed Desert Scrub	267.8	386.5
Colorado Plateau Mixed Low Sagebrush Shrubland	2.0	3.3
Colorado Plateau Pinyon-Juniper Woodland	415.5	139.8
Colorado Plateau Shrub-Steppe	240.5	233.8
Colorado Plateau Volcanic Rock and Cinder Land	6.6	4.7
Colorado Plateau Wash	24.2	11.1
<b>Total</b>	<b>2178.7</b>	<b>1305.6</b>
<b>Mojave Desert Ecological System</b>		
Mojave Desert Active and Stabilized Dune	37.6	22.3
Mojave Desert Bedrock Cliff and Outcrop	1.0	4.9
Mojave Desert Blackbrush-Mormon-tea Shrubland	5.4	34.4
Mojave Desert Creosotebush-White Bursage Desert Scrub	45.1	110.0
Mojave Desert Grassland	15.5	3.0
Mojave Desert Lower Montane Riparian Woodland and Shrubland	1.2	0.0

Mojave Desert Mixed Desert Scrub	67.1	111.3
Mojave Desert Shrub-Steppe	85.5	9.9
Mojave Desert Volcanic Rock and Cinder Land	45.7	11.8
Mojave Desert Wash	0.2	5.5
<b>Total</b>	304.3	313.2

The following table and text were added in section 5.3.8.2.2 Existing Highway Alternative to address temporary and permanent disturbance acres by vegetation community in each region: The Existing Highway Alternative (Intake System, Water Conveyance System, Hydro System and KCWCD System) construction would directly affect vegetation communities covering 3,795 acres in the ROW. Temporary and permanent effects on vegetation communities in the Colorado Plateau Region are quantified in Table 5-83. The Mojave Desert Region temporary and permanent effects are the same as those described for the Proposed Action in Section 5.3.8.2.1. The existing highway alternative would directly affect a total of 3,177 acres in the Colorado Plateau Ecological Region; however, only 36% of the disturbance would be permanent. The Existing Highway Alternative (Hydro System) construction would directly affect vegetation communities covering 618 acres in the Mojave Desert Ecological Region, half of which would be permanently disturbed.

<b>Table 5-83.</b>		
<b>Temporary and Permanent Disturbance Acres by Vegetation Community – Existing Highway Alternative</b>		
<b>Vegetation Community Type</b>	<b>Temporary (Acres)</b>	<b>Permanent (Acres)</b>
<b>Colorado Plateau Ecological System</b>		
Colorado Plateau Active and Stabilized Dune	199.3	41.1
Colorado Plateau Big Sagebrush Shrubland	276.3	185.3
Colorado Plateau Blackbrush-Mormon-tea Shrubland	348.0	151.2
Colorado Plateau Grassland	10.2	5.2
Colorado Plateau Greasewood Flat	19.9	18.4
Colorado Plateau Gypsum Badlands	73.3	52.5
Colorado Plateau Juniper Savanna	7.6	2.1
Colorado Plateau Lower Montane Riparian Woodland and Shrubland	10.4	6.9
Colorado Plateau Mixed Bedrock Canyon and Tableland	172.1	19.8
Colorado Plateau Mixed Desert Scrub	301.9	312.0
Colorado Plateau Mixed Low Sagebrush Shrubland	1.2	1.3
Colorado Plateau Pinyon-Juniper Woodland	418.2	145.9
Colorado Plateau Shrub-Steppe	155.4	199.4
Colorado Plateau Volcanic Rock and Cinder Land	6.6	4.7
Colorado Plateau Wash	21.3	9.9
<b>Total</b>	2021.7	1155.6

The following table and text were added in section 5.3.8.2.3 Southeast Corner Alternative to address temporary and permanent disturbance acres by vegetation community in each region: The Southeast Corner Alternative (Intake System, Water Conveyance System, Hydro System and KCWCD System) construction would directly affect vegetation communities covering 3,795 acres. Temporary and permanent effects on vegetation communities in the Colorado Plateau Region are quantified in Table 5-84. The Mojave Desert Region temporary and permanent effects are the same as those described for the Proposed Action in Section 5.3.8.2.1. The southeast corner alternative would directly affect 3,550 acres in the Colorado Plateau Ecological Region; however, only 37% would be permanently disturbed. The Southeast Corner Alternative (Hydro System) construction would directly affect vegetation communities covering 618 acres in the Mojave Desert Ecological Region, half of which would be permanent disturbance.

Table 5-84.		
Temporary and Permanent Disturbance Acres by Vegetation Community - Proposed Action		
Vegetation Community Type	Temporary (Acres)	Permanent (Acres)
Colorado Plateau Ecological System		
Colorado Plateau Active and Stabilized Dune	197.0	38.8
Colorado Plateau Big Sagebrush Shrubland	369.9	258.8
Colorado Plateau Blackbrush-Mormon-tea Shrubland	299.1	147.1
Colorado Plateau Grassland	84.8	39.4
Colorado Plateau Greasewood Flat	4.7	4.8
Colorado Plateau Gypsum Badlands	24.1	6.6
Colorado Plateau Juniper Savanna	6.6	1.1
Colorado Plateau Lower Montane Riparian Woodland and Shrubland	9.4	5.6
Colorado Plateau Mixed Bedrock Canyon and Tableland	176.7	22.3
Colorado Plateau Mixed Desert Scrub	389.3	380.1
Colorado Plateau Mixed Low Sagebrush Shrubland	4.1	1.7
Colorado Plateau Pinyon-Juniper Woodland	415.4	139.8
Colorado Plateau Shrub-Steppe	241.8	234.5
Colorado Plateau Volcanic Rock and Cinder Land	6.6	4.7
Colorado Plateau Wash	22.7	12.3
<b>Total</b>	<b>2252.2</b>	<b>1297.6</b>

**FERC Comment 41:**

*Section 5.3.8.2.1 of the PLP states: “[e]ffects on vegetation cleared and grubbed from ROW would be short-term.” Many desert shrubs and cacti require extended periods to mature from seed or to regenerate after trimming because of the limited resources in the desert environment. In the license application, clarify what time scale you are using to distinguish between short-term and long-term effects and describe the methods you would use to fully reestablish plant communities in areas disturbed by the proposed project.*

**UDWRe Response:**

**Please see section 5.3.8.3 Protection, Mitigation, and Enhancement Measures. Also, the following sentence was added to sections 5.3.8.2.1 Proposed Action, 5.3.8.2.2 Existing Highway Alternative, and 5.3.8.2.3 Southeast Corner Alternative:**

**“Construction staging areas would be restored and revegetated and would regain some of their habitat values within two or three growing seasons.”**

**FERC Comment 42:**

*Section 5.3.10.3.1 of the PLP lists a variety of BMPs you would implement to mitigate proposed project effects on special status plants and invasive species. In some instances, you state that the measures “may” be implemented, while in other cases, you state that measures “would” be implemented, but you do not clearly describe how you would select specific BMPs for specific areas of the proposed project. Also, the language describing the BMPs is vague. For example, BMP-SS22 states: “sensitive plants could be transplanted”; however, this statement does not clearly indicate whether salvage and transplant is proposed or what conditions would trigger plant salvage. In the comments on the ISR, issued May 9, 2011, we asked you to file a special-status plant protection plan and a weed management plan with the license application, and the current list of potential BMPs provided in the PLP is not adequate to address this request. The special-status plant protection plan should specify the extent to which special status plant species (federally listed threatened or endangered species, Bureau of Land Management (BLM) sensitive species, and state of Arizona highly safeguarded native plants) would be salvaged from clearing areas and transplanted following construction. If salvage and transplant is proposed, this plan should include descriptions of where and how plants would be stored during construction. The special-status plant protection plan should also describe how the applicant would use specific BMPs and describe the conditions under which additional BMPs would be implemented. To facilitate our analysis of your proposed measures and the effects of your proposed measures on special status plants and noxious weeds, file a special-status plant protection plan and a weed management plan with the license application. Include documentation of any agency consultation during preparation of the plans and any agency comments received on the draft plans.*

**UDWRe Response:**

**The final study report will include a special-status plant protection plan and weed management plan. All relevant local, state, and Federal agencies and tribes will be consulted.**

**FERC Comment 43:**

*In table 5-110 of the PLP, several of the “X” in the Great Basin column have asterisks; clarify what the asterisks signify.*

**UDWRe Response:**

**The Great Basin Column of Table 5-110 has been deleted – there are no current alignments within the Great Basin Ecological System.**

**FERC Comment 44:**

*In sections 5.3.11.2.5.3 and 5.3.12.2.6.1 of the PLP, you indicate that injury by electrocution and collisions with the proposed transmission line could cause mortality of birds, including the federally-listed California condor. In section 5.3.12.3.1 of the PLP, you propose to construct new and upgraded transmission lines to meet the most current edition of Suggested Practices for Raptor Protection on Powerlines to minimize potential effects. This guidance document includes a variety of standards to prevent electrocutions but does not address collision impacts. In the license application, review Reducing Avian Collisions with Powerlines - the State of the Art in 2012<sup>1</sup> and specify which measures, if any, you propose to include in your BMPs to reduce bird collisions with transmission lines.*

<sup>1</sup>APLIC (Avian Power Line Interaction Committee). 2012. Reducing avian collisions with power lines: The state of the art in 2012. Edison Electric Institute and Avian Power Line Interaction Committee, Washington, D.C.

**UDWRe Response:**

**The following have been added to Final Study Report 13 Chapter 5.1 General Mitigation Measures:**

- **New and upgraded overhead power transmission lines would be constructed to meet the most current edition of Suggested Practices for Raptor Protection on Power Lines (EEI 2006) and Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012).**
- **An Avian Protection Plan should be developed following the Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005) prior to construction.**

**Chapter 5.3.11.2.5.3 and 5.3.12.2.6.1 are revised to read:**

**“Avian protection from electrocution and collision could include continuous monitoring of the transmission line to determine areas, species and probable mortality causes and to prioritize line segments for modification. Design features such as line marking to increase the visibility of the line, removing the shield wire if lightning is not an issue or if lightning arresters can be used instead, and if possible modifying adjacent land uses to reduce avian attractants.”**

***Recreation:***

**FERC Comment 45:**

*Many PLP maps do not include any reference to proposed project features and are therefore difficult to interpret. For all maps, ensure that any recreation areas mentioned in the text are shown on the accompanying figures and depict these areas relative to the location of proposed project features.*

**UDWRe Response:**

**The recreation maps have been revised to show the proposed LPP Project features in relation to the recreation features along the alignments.**



**FERC Comment 46:**

*Section 5.3.13 of the PLP contains a list of the various land management entities that manage land potentially affected by the proposed project. Although you provide visitor use estimates for some of the large management units, you do not provide visitor use estimates or seasonal use patterns for the specific areas affected by the proposed project. This information should also include characteristics of visitors, such as activity type. Ensure you provide this specific, detailed information in the license application.*

**UDWRe Response:**

**Additional information has been provided where available.**

**FERC Comment 47:**

*Section 5.3.13 of the PLP indicates that construction activities will, when possible, take place during off-peak periods of recreation use. However, there is no listing or analysis of the seasonal use patterns at any of the recreation areas that may be affected by project construction. Please provide specific and detailed information regarding visitation and recreation use at each affected area in the license application.*

**UDWRe Response:**

**Additional information has been provided where available.**

**FERC Comment 48:**

*Section 5.3.13.1.2 of the PLP describes many specific and potentially project-related recreation needs described in the Utah and Arizona Statewide Comprehensive Outdoor Recreation Plans, surveys of local residents, and various agency plans. However, your proposal does not specifically describe if or how the proposed project would contribute to meeting these needs. Please include this information in the license application.*

**UDWRe Response:**

**The text has been revised to address this comment. While the LPP project is not generally expected to contribute to meeting the needs identified in SCORPs, surveys of local residents, and various agency plans, these and other needs would be considered as appropriate and agreed to in consultation with resources agencies during detailed LPP Project design and construction.**

**FERC Comment 49:**

*Section 5.3.13.2.1 of the PLP describes the proposed permanent removal from recreation use of 200 acres of the BLM's Sand Mountain Special Recreation Area due to the construction of the Hurricane Cliffs pumped storage facility. Similarly, section 5.3.13.5.5 discusses the permanent removal of 800 acres of BLM land from recreation use under the "No Lake Powell Water" alternative. For Commission staff to analyze the project effects on existing recreation opportunities and possible license conditions to mitigate for this loss, your license application*



*should provide detailed information and maps showing the type of infrastructure and the amount and type of recreational use of the areas that would be removed.*

**UDWRe Response:**

**The text has been revised to address this comment. Additional information has been provided regarding the BLM's Sand Mountain SRMA and potential LPP and No Lake Powell Water Alternative impacts.**

**FERC Comment 50:**

*Section 5.3.14.1.2.6 of the PLP discusses Wild and Scenic Rivers, and table 5-115 summarizes your effects assessment. However, your license application should discuss specific effects of the proposed project on these segments and what aspects of the proposed project could cause these effects. Please include a map of the potentially affected river segments and show the location of each proposed project feature or activity associated with any effect.*

**UDWRe Response:**

**There are no designated Wild and Scenic Rivers (WSR) that would be crossed by project features. There would be no direct or indirect impacts on any WSR from the LPP Project.**

**FERC Comment 51:**

*The PLP states that a recreation plan will be filed with the license application, including proposed mitigation measures for recreation resources. So that we can understand the spatial context of your measures, include an overview map and series of detailed maps in the recreation plan that depict all affected existing and proposed recreation resources including trails, trailheads, campsites, and points of public access. Indicate with map symbols whether these areas would be closed (temporarily or permanently), relocated, or improved. Also indicate any new recreation facilities and show their locations relative to your proposed project boundary. The plan should also include recreation facilities and amenities tables for each project recreation site that follow the Project Recreation Facilities Tables and As-built Site Plan Drawing Guidance.<sup>2</sup> The recreation plan should include site capacities and an implementation schedule and identify responsibility for any construction, operation and maintenance of the facilities. Consult with all affected recreation management entities to develop the plan and include an appendix in the recreation plan that explains how the comments received during consultation have been addressed.*

<sup>2</sup> See <https://www.ferc.gov/industries/hydropower/gen-info/guidelines/as-built-site-plan.pdf>

**UDWRe Response:**

**The BMPs for recreation measures have been revised to clarify that access to recreation sites would be maintained utilizing temporary bypasses of the existing access roads. There are no proposed LPP recreation sites, therefore, recreation facility tables are not relevant to the LPP Project. The direct impacts on the Sand Mountain Special Recreation Management Area near Sand Hollow Reservoir would be mitigated according to the measures described in the Recreation Management Plan.**

## ***Land Use:***

### **FERC Comment 52:**

*Section 5.3.14.1.2.10 of the PLP states: “the Proposed Action would cross the Kanab Creek [Area of Critical Environmental Concern] in two places.” Similarly, it states historic trails: “would be crossed by the Proposed Action.” Identify in the license application what specific infrastructure would cross these areas. Additionally, section 5.3.14.2.3.1 of the PLP indicates that the proposed project would have no significant land use effects on the Kanab Creek Area of Critical Environmental Concern. This statement appears at odds with text indicating that crossing the Kanab Creek Area of Critical Environmental Concern at two places would be inconsistent with BLM’s Recreation Management Plan objectives. Reconcile these assessments in the license application, report on whether the proposed project would or would not be consistent with Kanab Creek Area of Critical Environmental Concern management objectives, and provide the basis for the assessment.*

### **UDWRe Response:**

**The infrastructure that would cross historic trails and the Kanab Creek ACEC would be the pipeline. The crossing locations would have temporary impacts to riparian resources in the ACEC that would be rehabilitated and have a minimal effect to the Kanab Creek ACEC.**

## ***Visual Resources:***

### **FERC Comment 53:**

*Section 5.3.16.2.3.6 of the PLP discusses visual effects relative to BLM’s Visual Resource Management classification and states: “extraordinary mitigation measures not defined in this document” would need to be implemented to meet designated classifications. However, without defining these measures, we do not understand what these measures would entail or how you have made this determination. Provide details of all proposed mitigation measures in the license application.*

### **UDWRe Response:**

**Additional mitigation measures have been added to Chapter 5, Section 5.3.16.3.1.1.**

## ***Cultural Resources***

### ***Archaeological and Historic-Era Resources:***

### **FERC Comment 54:**

*Section 5.3.19 of PLP identifies the three additional field tasks required by the Utah and Arizona State Historic Preservation Offices (SHPOs), including:*

- (1) revisiting isolated occurrences of artifacts to evaluate whether these isolated occurrences should be identified as sites after re-survey;*
- (2) surveying private lands not previously surveyed because permission was not granted; and*
- (3) relocating previously recorded sites that were not found during the Class III survey. These three tasks are also identified in the November 30, 2015, Preface to the December 2014 Class III Report. We understand that these three tasks have been completed and that an updated Class III*

*archaeological report will be prepared to reflect new information. The Preface to the Class III report also states that you received a temporary right-of-entry onto Arizona State Trust Lands on Monday November 23, 2015. The license application should clarify whether these additional state lands were surveyed under item (2) above or whether additional fieldwork will be required. If additional fieldwork is needed, provide a schedule for completing the work and specify whether the results will be provided in the final Class III Report to be provided to the Commission, agencies, and Native American Tribes by September 19, 2016 (per your December 21, 2015, revised schedule).*

**UDWRe Response:**

**A discussion on the un-surveyed lands has been added to the cultural resources report (see page 5-120, 5.5 Un-surveyed Lands and Appendix L: Interpolation Maps).**

**At this time, no additional fieldwork is anticipated.**

**FERC Comment 55:**

*Tables 1-2 and 1-3 of your Class III Report identify the total miles and acreage within the proposed project area of potential effect (APE) by proposed project feature and jurisdiction; however, the total number of miles within the APE on BLM land and the total miles and acreage within the APE on Tribal land in Arizona shown in table 1-3 of the Class III Report are incorrect. When we sum the total miles within the APE on BLM lands in Arizona in table 1-3 we get 46.87 miles (not 6.87 miles). Likewise, our total miles on Tribal lands in Arizona is 24.25 miles (not 631.35), and our total acreage on Tribal lands is 660.35 acres (not 53.24 acres). Ensure that all tables and sums in the license application and supporting materials and studies are accurate.*

**UDWRe Response:**

**Tables 1-2 and 1-3 were reviewed to verify that the information within them is correct.**

**FERC Comment 56:**

*Section 5.3.19.1.2 of the PLP provides an extensive and detailed overview and context for cultural resources. Because a detailed description of the cultural resources context will also be provided in the final Class III Report, the license application should only contain an abbreviated overview and context for cultural resources and refer readers to the Class III Report for more detail. Though the overview and context of the PLP is extensive, the description of the Kaibab-Paiute Indian Reservation at the end of this section is brief and incomplete. In the license application and final Class III report, include additional information about the reservation's history, its current status, and its connection to the proposed project.*

**UDWRe Response:**

**Portions of the report used to abbreviate the cultural context: page 3-1, 3.1 General and 3.2 Prehistoric Context; page 3-74, 3.3 Historic Context.**

**The general history on the KPIR has been revised in Final Study Report 03 – Archeological and Historic-Era Resources. (Refer to page 3-104, 3.3.5.1.2 Kaibab Paiute Indian**

Reservation). If FERC requires a more detailed history of the KPIR, UDWRe will need to go through the Tribe to gain access to the information or even have the tribe write it.

**FERC Comment 57:**

*Section 5.3.19.1.3 of the PLP discusses four archaeological and historic-era sites and briefly mentions the proposed project APE; however, the APE in these geographical areas is not specifically described. In the license application, provide a detailed description of the APE for archaeological and historic-era resources and also include a brief summary of the consultation efforts that were undertaken to determine the APE. Your APE description should consider our letter to you dated May 7, 2009, in which we provided an attachment to Study Plan 3 (Archaeological and Historic-era Resources) that clarified the width of the APE. In our letter, we explained that the study plan defines a 2-mile-wide study area that would be addressed in the Class I Inventory Report (file and archival searches, literature reviews, oral ethnographic interviews and on-site visits). The purpose of this wider APE was to address any visual, audible, or air quality types of proposed project-related effects on historic properties and culturally important sites within this broader 2-mile-wide study area.*

**UDWRe Response:**

**The archaeological APE does not differ from geographic area to area. There is a specific description which states that there is a 250 ft wide corridor for the entire pipeline route, all pipeline alternatives, as well as on all transmission line corridors. Each corridor is centered on the proposed pipelines and transmission lines. There is a 100 ft wide corridor for proposed access roads, centered on the proposed access road. For staging areas the footprint of the staging area is included as well as a 100 ft buffer surrounding each proposed facility. That is all that the archaeological APE includes.**

**As noted in the comment, there is also a 2-mile wide “study area” addressed in the Class I inventory to address visual, audible or air quality issues of the proposed project. This wider corridor was also included to address any identified culturally significant sites, archaeological sites, and Traditional Cultural Properties which may be extant adjacent to the proposed project corridors.**

**FERC Comment 58:**

*In the license application, briefly describe the methodology used to identify cultural resources within the APE and evaluate cultural resources for listing in the National Register of Historic Places (National Register). Include the total miles and acreage that were and were not surveyed within the APE, including the total number of miles on private, state, and federal lands. If specific lands were not surveyed, explain why they were excluded.*

**UDWRe Response:**

**The methodology used to identify and evaluate cultural resources with the APE is in Study Report 3 – Archeological and Historic-Era Resources (Refer to page 4-3, 4.4 Class III Cultural Resources Field Survey and Inventories).**

**Discussions on the total miles and acreage that were surveyed, not surveyed, and land jurisdiction are, also, in Study Report 3 – Archeological and Historic-Era Resources (Refer**

**FERC Comment 59:**

*Your license application and revised Class II Report should ensure that all terms are clear and well defined. For example, in table-5-2 and table 5-7 of the Class III Report, one column discusses “Geoarch Evaluation” and some sites are indicated as “Moderate,” “Low,” “Low (tested),” and “High.” We understand that the Geoarchaeology Report (appendix I) discusses these terms, but if they are used in the Class III Report or in the license application, you must briefly explain these terms and what criteria were used to assign them. Additionally, both of these tables in the Class III Report would benefit from an additional column that provides approximate date ranges and the cultural period or stage associated with each resource (e.g., Archaic and Basketmaker).*

**UDWRe Response:**

**A brief discussion regarding the Geoarch Evaluation column has been added to Study Report 3 – Archeological and Historic-Era Resources (Refer to page 5-2, 5.2 Utah Results and Recommendations and page 5-72, 5.3 Arizona Results and Recommendations).**

**Due to Native American sensitivity the cultural affiliation for each of the sites will not be included in Tables 5-2 and 5-7. However, this detailed information is given in the individual site forms (Appendices C & D).**

**FERC Comment 60:**

*We identified a number of discrepancies in the site counts in the PLP that require clarification and correction that should be filed with or included as part of the license application, including:*

- *Discrepancies between tables 5-165 and 5-166 in section 5.3.19.1.5 and the number of resources identified in the text of this section. Excluding 31 sites identified within the boundary of the Kaibab Reservation, the tables identify a total of 354 sites within the proposed project APE in Utah (282 prehistoric sites and 72 historic sites), while the text specifies 329 sites and 346 sites (269 prehistoric sites, 51 historic sites, 14 multi-component sites, 12 standing structures). Additionally, table 5-4 of the Class III Report indicates that 283 prehistoric sites were identified in Utah (as opposed to the 282 sites identified in the same table in the PLP).*
- *Discrepancies between tables 5-167 and 5-168 and the number of resources identified in the text of this section; the tables identify a total of 148 sites in Arizona (114 prehistoric sites and 31 historic sites), while the text specifies 140 sites and 118 sites (94 prehistoric sites, 19 historic sites, and 5 multi-component sites).*
- *Section 5.3.19.1.5.4 states that 190 sites of the 329 recorded sites identified in Utah were evaluated as eligible for listing in the National Register and 139 sites are recommended as not eligible. However, sections 5.3.19.2.1.1 through 5.3.19.2.1.3 describe a total of 163 sites that may be eligible for listing on the National Register in Utah (129 prehistoric sites, 25 historic sites, and 9 multi-component sites).*
- *Section 5.3.19.2.1.4 states that in Arizona, 110 of 140 recorded sites were evaluated as being eligible for listing in the National Register and 30 are recommended as ineligible. However, sections 5.3.19.2.1.4 through 5.3.19.2.1.6 describe a total of 84 eligible sites in*

*Arizona (58 prehistoric sites, 16 historic sites, and 10 multi-component sites). The number of sites in tables 5-165 through 5-168, a total of 354 sites (not 329), were recorded in Utah and 148 (not 140) were recorded in Arizona.*

**UDWRe Response:**

**The site statistics in the cultural resources report have been updated and reviewed for discrepancies.**

**FERC Comment 61:**

*Sections 5.3.19.1.5.3 and 5.3.19.1.6.3 of the PLP describe “isolated finds” identified in Utah and Arizona. It is presumed that many of these finds were subsequently revisited at the request of the Utah and Arizona SHPOs (see comment 1 above). In the license application and final Class III Report, clearly identify the methods used to reinvestigate these finds and specify which of the original isolated finds were later reclassified as sites.*

**UDWRe Response:**

**The Utah SHPO did not request that any isolated finds in Utah be revisited. However, the Isolated Occurrences (IO) in Arizona were problematic. Sagebrush thoroughly reviewed all of the known IO’s in Arizona and large IO’s identified during the original survey, which possibly represented cultural sites, were revisited by Sagebrush. Sagebrush then determined if the cultural assemblage was sufficient for the isolate to be considered a site. Of these revisited isolates, two (IO-107 and IO-154) were recorded as sites. Approximately 100 IO’s were added as artifacts into existing site boundaries, and others were added into extended site boundaries when the sites were resurveyed and boundaries expanded (Refer to page 5-109, 5.3.5 Isolated Occurrences Discussion).**

**FERC Comment 62:**

*Section 5.3.19.2.1 identifies a total of 235 sites within the proposed project APE (both states combined) that is eligible for listing in the National Register and has the potential to be affected by the proposed project. While the final Historic Properties Management Plans (HPMPs) for the proposed project would identify the specific effects on each resource, many interested organizations and entities will not have access to the final HPMPs because they contain privileged information. For this reason, the license application should describe the types of proposed project-related effects that could occur (e.g., direct, indirect, long term, short term, access, potential vandalism, and visual effects) and provide the number of sites both affected and adversely affected by the proposed project.*

**UDWRe Response:**

**This report is an identification and evaluation of historic and cultural resources for Section 106 compliance. No sites have been evaluated for impacts or adverse effects at this stage of the project. Impacts and effects are generally discussed in the NEPA document during a later phase of project development. The HPMP is a draft document that will outline potential impacts at this point in the project. After the NEPA document has been completed the HPMP will be finalized.**



**It should be added, that BLM has not yet provided determinations of eligibility to the State of Utah for many of the sites that could be potentially affected by the project. This precludes providing a comprehensive list, at this time, of affected and adversely affected historic properties on the project.**

**FERC Comment 63:**

*Section 6.4.1 of the Class III Report states that sites and isolated finds that are not eligible for listing in the National Register will not be affected by the proposed project. Clarify in the final report that these sites may be affected, but because they may not be eligible for listing in the National Register, the effects would not be considered under section 106 of the National Historic Preservation Act.*

**UDWRe Response:**

**This section has been revised in the study report (Refer to page 6-4, 6.4.1 Ineligible Sites and Former Alignments).**

**FERC Comment 64:**

*Section 5.3.19.3 of the PLP states that both an HPMP and a Historic Properties Treatment Plan (HPTP) would be prepared for the proposed project; however, according to Study Plan 3, Archaeological and Historic-Era Resources, and Study Plan 23, Traditional Cultural Properties, two separate HPMPs would be prepared—one for Utah and one for Arizona. Separate HPTPs would not be prepared because specific treatment measures to resolve adverse effects would instead be contained within each individual HPMP. Clarify why the proposal in the PLP differs from what is required in the two study plans. Additionally, for those interested organizations and entities who do not have access to the final HPMPs, the license application should include the types of general and specific measures that could be implemented to resolve adverse effects (e.g., data recovery, monitoring, public interpretation, and treatment of human remains).*

**UDWRe Response:**

**The HPTP was requested by BLM after Study Plan 3 was written and approved by all of the parties, including BLM. Essentially, the HPMP and HPTP are similar documents. FERC requires an HPMP to deal with Relicense projects that deal with historic standing structures, such as existing dams and associated buildings. BLM generally requires HPTP to deal with the treatment of archaeological sites. Since there are no historic dam facilities associated with this project, the HPMP will be primarily documenting the treatment of archaeological sites similar to an HPTP.**

**This report is an identification and evaluation of historic and cultural resources for Section 106 compliance. No sites have been evaluated for impacts or adverse effects at this stage of the project. Impacts and effects are generally discussed in the NEPA document during a later phase of project development. The HPMP is a draft document that will outline potential impacts at this point in the project. After the NEPA document has been completed the HPMP will be finalized.**

***Ethnographic Resources:***

**FERC Comment 65:**



*The PLP does not discuss any relationships between ethnographic resources and documented archaeological resources. Section 5.4.3 of the Class III Report describes a number of culturally important places (identified during the ethnographic studies) that may contribute to the eligibility of archaeological sites. In the license application, summarize ethnographic sites that relate to documented archaeological resources. Both the final Class III Report and the Ethnographic Report should contain maps that depict both types of resources so the relationships, if any, are clear.*

**UDWRe Response:**

**This comment was previously made and addressed by Sagebrush when Section 5.4.3 Native American Consultation, page 5-114, of the cultural resources report was added. This section; however, does not address the comment fully. There are two problems with this comment. First, the Hopi and the Zuni have stated in their separate ethnographies, that they based on the fact that the Lake Powell Pipeline follows their traditional and historic migration corridor, that ALL sites within this corridor are considered important Traditional Cultural Properties (TCP\_. In other words, every Prehistoric site and Native American related historic site within the LPP project area are considered TCPs by the Hopi and Zuni Tribes. The Hualapai, on the other hand, state that all sites related to the Colorado River are TCPs, due to the importance of the Colorado River to the tribe.**

**The Southern Paiute have more specific areas they consider important; however, the Southern Paiute have not provided maps of these areas. They also have not provided a physical description. To date, all we have is a list of names of areas that are considered, or in the process of being considered as TCPs by the tribe. Therefore, we are unable to place a boundary around areas, and determine which site fall within these areas.**

**Although the tribes and ethnographers had access to maps showing sites recorded within the LPP corridor, no individual sites were called out as more important than others. That being said, there was more emphasis placed on habitation and rock art site.**

**Because of these reasons, there are no summaries or maps.**

**FERC Comment 66:**

*Section 5.3.20.1.4.1 of the PLP states that the Southern Paiute Advisory Committee (SPAC) identified several areas of concern in two ethnographic reports. You state that in most cases these areas are not traditional cultural properties (TCPs), but you describe three locations that may be TCPs and/or sacred sites. In the license application, clarify the criteria you used to determine which of the areas of concern SPAC identified might be TCPs.*

**UDWRe Response:**

**The Southern Paiute Advisory Committee (SPAC) produced two reports for this project: the first was the ethnographic report and the second was a comparison between the South and Existing Highway alternatives of the LPP penstock within the State of Arizona. In these reports, the Southern Paiute indicated several areas of concern. In many instances these “culturally sensitive places” are not Traditional Cultural Properties (TCP) that have been submitted for nomination to the NRHP. Only one of the places has been declared a TCP by**

the Kaibab Band of Paiute Indians, one has been suggested for nomination to the NRHP, and one has been declared a Sacred Site. The identified culturally sensitive places are not disclosed in this analysis to protect the location and integrity of each place and respect the Southern Paiute's request for confidentiality.

The criteria applied to our statement above comes directly from the Southern Paiute Advisory Committee (SPAC) itself. In their report entitled: Lake Powell Pipeline EIS Avoidance vs. Mitigation Report, dated November 12, 2012, the SPAC evaluated all of the project alternatives using 13 specific criteria with the overall understanding that..."all Southern Paiute aboriginal territory is sacred". These criteria included:

1. Number of culturally essential components (both places and larger areas) such as ceremonial places, medicine places, living places, resource use areas and spiritual places;
2. Culturally sensitive places that would suffer irreversible, lasting effects if exposed to pipeline construction;
3. Traditional medicine and food plants;
4. Critical viewsapes necessary for prayer and ceremony;
5. Food resources, medicinal animals, and spirit helpers (spiritual beings who assist in ceremony);
6. High concentrations of Puhav (associated with vision questing areas, medicine areas, doctoring areas, time keeping areas, rites of passage areas, portals to spiritual dimensions, and places used for space travel);
7. Primarily sacred ceremonial areas used by Southern Paiute religious leaders;
8. Ceremonial deposits;
9. Known burials;
10. Region of Refuge ("Zion")/prophecy areas;
11. Presence of Tumpituxwinap (rock pecking and painting panels)
12. Current condition and access to cultural sites;
13. Presence of ceremonial minerals and rocks (e.g. petrified wood and ceremonial white paint).

According to the SPAC report, "In general, both alignments are likely to impact culturally important resources and while neither is ideal, the cultural significance and irreparable damage that would occur to places and landscapes along the Southern alignment are comparatively more concerning." They continue in some detail to list and show graphically the areas that most concern them. Many areas are shown on the northern alignment, but the SPAC indicates that, while these areas should be avoided, there are mitigation measures that could be taken to allow the pipeline to be built. Along the southern alignment there are actually five locations about which they state: "Due to irreparable harm that would result from pipeline construction, these five sites must be avoided". Two of these five sites were specifically called out by the Kaibab Paiute Indian Tribe council as a TCP in a decision made on March 17, 2011. The other three were not called out specifically as TCPs by the council, but are considered of great cultural importance by the SPAC and need to be avoided.

The ethnographic report made reference to these decisions and, it appears, did not call out all that the SPAC stated on the southern alignment, in part because there may be ways to avoid them through rerouting and other measures and also it was an oversight which will be corrected in the final report. Because the SPAC and Kaibab Tribe are making decisions regarding the existence and significance of TCPs, and they are the ones who retain the

knowledge concerning these, there is no criteria which would be appropriate for Sagebrush to apply regarding the existence or significance of TCPs.

**FERC Comment 67:**

*Section 5.3.20.1.4.3 of the PLP states that the Zuni did not identify any “shrines” within the proposed project APE and more study would be needed to identify them. The need for additional study is indicated in other sections of the PLP as well. In the license application, clarify your plan and schedule to conduct additional ethnographic studies, if any.*

**UDWRe Response:**

**This was a statement made by the Zuni Tribe. They believed it possible that such shrines exist in the area, but it was not a statement made by the State of Utah indicating a need to undertake such a study nor is such a study currently under consideration.**

**FERC Comment 68:**

*Section 5.3.20.1.5 of the PLP and section 5.4.4 of the Class III Report state that during the archeological studies, human remains were identified at two sites in Arizona. Because these discoveries were made during archaeological studies and because human remains are not considered to be ethnographic resources or TCPs, discuss these finds in the Archaeological and Historic-Era Resources section of your application. Also, specify in the license application and the final Class III Report if the two sites were located on state or private lands and describe any consultation that occurred with Native American Tribes regarding these remains.*

**UDWRe Response:**

**There is a discussion on the Human Remains in the study report (Refer to page 5-118, 5.4.4 Human Remains).**

**The burial location in Utah was discovered on State Institutional Trust Lands Administration (SITLA) land and the one in Arizona was found on lands under the jurisdiction of the Arizona Department of Transportation (ADOT). Consultation was undertaken by Sagebrush with the State Archaeologist’s Office for the Utah burial remains. That office (at the time, Ron Rood, Assistant State Archaeologist dealt with the case) coordinated with appropriate tribes and came to a resolution about how to handle it. Sagebrush was not a part of that consultation process. The ADOT archaeologist was contacted concerning the burial remains found along the highway in Arizona. Which tribes he may have contacted and when are unknown.**

**FERC Comment 69:**

*Section 5.3.20.3 of the PLP states that the goal is to avoid or minimize proposed project-related effects on TCPs and ethnographic sites. In the license application, describe the types of proposed project-related effects that could occur and the types of general and specific measures that could be implemented (also see comment No. 64 Archaeological and Historic-Era Properties). The HPMPs prepared for each state would provide descriptions of the specific measures to be implemented to protect ethnographic sites and cultural landscapes that are eligible for listing in the National Register.*

**UDWRe Response:**

**This report is an identification and evaluation of historic and cultural resources for Section 106 compliance. No sites have been evaluated for impacts or adverse effects at this stage of the project. Impacts and effects are generally discussed in the NEPA document during a later phase of project development. The HPMP is a draft document that will outline potential impacts at this point in the project. After the NEPA document has been completed the HPMP will be finalized.**

***Paleontological Resources:***

**FERC Comment (Un-numbered):**

*Section 5.3.21.2 of the PLP states that the proposed project would have minor, long-term effects on 49 paleontological sites that were identified during field surveys. You list avoidance as the preferred means to protect these sites, but where avoidance is not possible, you also describe the other measures that could be undertaken, including: (a) minimizing construction effects; (b) excavating, documenting, collecting, and curating paleontological resources found during construction; (c) monitoring where there is a moderate and high potential for discovery during construction; and (d) temporarily halting construction where paleontological resources are found during construction until they can be identified, excavated, documented, collected, and curated. Items b, c, and d appear to refer to unidentified paleontological resources that may be discovered during construction activities. In accordance with section 8.6.2.4 of Study Plan 8, describe the specific mitigation measures that would be employed at each of the 49 identified sites to minimize or mitigate any unavoidable impacts. For unidentified sites, also describe your proposed monitoring methods and identify the areas to be monitored. Explain the difference between item (b) and item (d). Both items would require halting construction if previously undocumented paleontological resources are identified during construction until appropriate treatment is completed. Finally, describe the process of consultation that would occur in the event that previously unidentified paleontological resources are identified during construction activities.*

**UDWRe Response:**

**Discussions on the impacts and mitigation have been added to Study Report 8 - Paleontological Resources (Refer to chapters 4, 5, 6 & 7).**

***Socioeconomics:***

**FERC Comment 70:**

*The PLP includes a socioeconomic section that summarizes the findings in the socioeconomic study. You provide extensive background and analysis that will support an environmental review; however, a number of areas are not consistent with section 4.41 (f)(5), Report on Socio-economic Impacts, of the Commission regulations. In addition to the analysis and economic modeling that you have provided, ensure that the license application explicitly evaluates all socioeconomic items in the regulations.*

**UDWRe Response:**

**The Socioeconomics/Water Resource Economics Final Study Report and socioeconomics/water resource economics section of Exhibit E have been revised to be consistent with section 4.41 (f)(5), Report on Socioeconomic Impacts, of the Commission regulations. The license application evaluates all socioeconomic items in the regulations.**

**An updated Opinion of Probable Capital Costs (2015-2016) has been prepared and it is included as an appendix with the Socioeconomics/Water Resource Economics Final Study Report. An analysis of operation and maintenance costs has been prepared and is included as an appendix with the Socioeconomics/Water Resource Economics Final Study Report.**

**Per guidance discussions with FERC staff, the Socioeconomics/Water Resource Economics Final Study Report: 1) removes the pumped storage and power system components from the NED analysis format; and 2) separately evaluates the power system components applying the preferred FERC “avoided cost analysis” methodology, in reviewing project benefits. The revisions also include detailed identification of the specific power system costs in the analysis section, referencing the Opinion of Probable Capital Costs appendix.**

**Per guidance discussions with FERC staff, the Socioeconomics/Water Resource Economics Final Study Report adopts the 0% real escalation rate, but treats all costs as 2015 dollars. For annualizing purposes, the report defers to nominal interest/discount rates; and capital costs are treated as “overnight index” values, reasonable for determining 2015 dollars.**

**The Socioeconomics/Water Resource Economics Final Study Report provides more complete detail on all of the power costs, power operations costs, and nominal interest/discount rates used in the project analysis, and the sources derived thereof.**

**Additional information in the RED section and Chapter 8 within the Socioeconomics/Water Resource Economics Final Study Report include more detail on the economic growth activity and development potential in the study area, as well as the baseline population/economic growth projections prepared by the Utah Governor’s Office. The UDWRe is providing the state with Colorado River water supply per the provisions of the Colorado River Compact and the direction indicated by the Governor and Legislature.**

**The Socioeconomics/Water Resource Economics Final Study Report better describes the cost-effectiveness analysis included in the report, where water supply alternatives are identified as available water right change/transfers, conservation or curtailment measures, and reverse osmosis water treatment plant alternatives. The reverse osmosis water treatment plant costs are evaluated in an appendix to the Alternatives Development Final Study Report.**

**The Socioeconomics/Water Resource Economics Final Study Report provides more detail on the specific NED analysis items, including a new set of B/C analysis charts that visually illustrate the effects and timing of the different benefit and cost components.**

**For the RED analyses, the Socioeconomics/Water Resource Economics Final Study Report relies on both existing Utah IO multipliers and relevant IMPLAN multipliers, providing a slight impact range estimate. The range likely captures some of the error present in any secondary impact estimates. Another set of IMPLAN multipliers could have been prepared, but the estimates from such would not be significantly different (very small) from the multiples applied in the final study report.**

**The Socioeconomics/Water Resource Economics Final Study Report has been reviewed extensively with state and regional water resources managers and reflects their technical and planning guidance. The report provides state and regional water resources managers with the type of economic analysis from which to make future project decisions. They are the decision makers, the report provides the best available information and analyses.**

**The license application filing includes more detailed information on financing impacts on water users.**

**The Socioeconomics/Water Resource Economics Final Study Report relies on the (State) Governor's Office population and economic growth forecasts. As a matter of state law, the UDWRe must use these forecast in evaluating the state's water supply needs. The final study report does include a description of the key population variables used in these forecasts, but it is beyond the authority of the UDWRe to adjust the forecast parameters.**

### ***Developmental Analysis:***

#### **FERC Comment 71:**

*The regulations do not require you to prepare a developmental analysis as part of the PLP. We want to remind you to include a developmental analysis in exhibit D of your license application. For specific guidance about preparing the developmental analysis, see Chapter 4 of Preparing Environmental Documents, Guidelines for Applicants, Contractors, and Staff on the Commission's webpage (see link referenced above).*

#### **UDWRe Response:**

**Exhibit D includes a developmental analysis.**

#### **FERC Comment 72:**

*The specific resource areas described in Chapter 5 of the PLP include numerous measures to protect and enhance the existing environmental resources of the proposed project area. The developmental analysis in the license application must include both the capital costs associated with the measure(s) and the annual operation and maintenance costs of the measure(s). To the extent possible, the license application also should include the costs associated with implementing the measures recommended or otherwise identified by other stakeholders. Also, ensure that exhibit E includes a schedule for implementing each of your proposed measures that is referenced to the license issuance date.*

#### **UDWRe Response:**

**The text of the developmental analysis and Exhibit E have incorporated the items identified in the comment.**

#### **FERC Comment 73:**

*In exhibit D of the license application, you need to provide the necessary information to enable us to complete an economic analysis of the hydro system aspects of the proposed project as required*



*under 18 CFR 4.41(e). Costs should be provided in 2016 dollars with no escalation. Energy rates for generation and for pumping that are representative of the region in which the proposed project is located should be provided for 2016 and should include the source of those rates. If there is an expectation that any of the hydro facilities would be eligible to provide any ancillary services (e.g., black start, capacity, spinning reserve, non-spinning reserve, and voltage control) to the market, note what those services would be and provide an estimate of the annual value of those services, including the basis for the values.*

**UDWRe Response:**

**Exhibit D contains the information identified in the comment.**

**FERC Comment 74:**

*The license application should include construction costs for each component system: (1) water intake system and water conveyance system with associated transmission system and all right-of-ways (no hydro); (3) proposed hydro system with associated transmission system and all right-of-ways including all hydro and pumped storage facilities; (4) separate costs for the proposed Hurricane Cliffs Pumped Storage facilities with associated transmission system and all right-of-ways; (5) Existing Highway Alternative hydro system with associated transmission system and all right-of-ways; and (6) Southeast Corner Alternative hydro system with associated transmission system and all right-of-ways. Costs should be provided in 2016 dollars with no escalation.*

**UDWRe Response:**

**Refer to Final Study Report 10 – Socioeconomics and Water resource Economics and Exhibit D of the license application.**

**FERC Comment 75:**

*For all costs in exhibit D of the license application, provide the estimated annual operation and maintenance costs in 2016 dollars with no escalation for each of the six component systems listed above for construction costs.*

**UDWRe Response:**

**The costs identified in the comment have been included in Exhibit D.**

**FERC Comment 76:**

*Provide average annual energy estimates for each of the hydro facilities (HS-1, HS-2, HS-3, HS-4, Hurricane Cliffs pumped storage, Sand Hollow Reservoir powerhouse) by year for 30 years starting with the year in which a new license may be issued (assume 2017) [Note: despite the length of a potential license, the Commission only conducts a 30-year economic analysis].*

**UDWRe Response:**

**The information identified in the comment has been included in Exhibit D.**

**Reclamation Comment 13:**



*(Multiple Figures, Pages 5-20, 5-23, 5-24, and 5-26)*

*The figures on the indicated pages are too small to read.*

**UDWRe Response:**

**The figures have been revised to improve readability.**

**Reclamation Comment 14:**

*(Sections 5.3.1.1.9, 5.3.1.2.2.7, 5.3.4.2.2.1, and 5.3.5.1.1.1, Pages 5-59, 5-68, 5-202, and 5-224)*

*5.3.1.1.9 Intake Pump Station Site Geologic and Hydrogeologic Conditions.*

*5.3.1.2.2.7 Intake Pump Station Site Effects.*

*5.3.4.2.2.1 Construction Effects.*

*5.3.5.1.1.1 Stream Channel Crossings. Discusses dewatering at stream crossings.*

*These are instances of dewatering which shows inconsistency with Section 3.1.3.2.6.13. The PLP states that: dewatering is not anticipated to be required for project construction on BLM- or NPS-administered land.*

**UDWRe Response:**

**Dewatering is generally not anticipated for most LPP Project features with the exception of the Intake Pump Station which is administered by Reclamation. It is anticipated that instances where it would be required to dewater for stream crossings would be very rare and UDWRe would make attempts to adjust the construction schedule or construction techniques to avoid dewatering.**

**Reclamation Comment 15:**

*(Figures 5-18 and 5-21, Pages 5-95 and 5-97)*

*The “Dam Filling Begins 1963” label does not point to 1963.*

**UDWRe Response:**

**The labels direct the reader to the point on the graphs within the figures where the filling of the dam began.**

**Reclamation Comment 16:**

*(Figures 5-21, 5-34, 5-41, 5-47, 5-53, and 5-59, Pages 5-97, 5-106, 5-110, 5-113, 5-116, and 5-119)*

*The same data (annual mean) are shown twice (by both the blue and green series). For clarity, it would be good to show the data once, and adjust the two Y-axis scales to equate the two units (cfs and AFY).*

**UDWRe Response:**

**UDWRe’s view is that the referenced graphs within the figures adequately convey the subject information.**

**Reclamation Comment 17:**

*(Figure 5-65, Page 5-124)*

*The same data (effluent flow) are shown twice. For clarity, it would be good to show the data once and adjust the two Y-axis scales to equate the two units (MGD and cfs).*

**UDWRe Response:**

**UDWRe's view is that the referenced graphs within the figures adequately convey the subject information.**

**Reclamation Comment 18:**

*(Section 5.3.3.3.1, Page 5-156)*

*I have not found any reference in the PLP for the specific need to acquire Stream Alteration Permits for stream crossings. This may be one place to discuss the need for permits.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 19:**

*(Section 5.3.6.1.2, Page 5-247 [sic])*

*The PLP states that: Typically most healthy fish and actively motile aquatic species can avoid being entrained in an intake suction flow if the velocity is maintained below the escape velocity (swimming speed) of those organisms.*

*Needs citation.*

**UDWRe Response:**

**A citation has been provided.**

**Reclamation Comment 20:**

*(Section 5.3.6.1.6.2, Page 5-254 [sic])*

*The PLP states that: Current proposed planning would have the crossing of the Paria River completed by open-cut excavation and fill during no or low-flow conditions. The pipeline crossing construction would involve a temporary diversion of any low stream flows to another portion of the broad river...*

*A 404 permit is required.*

**UDWRe Response:**

**Your comment is noted.**

**Reclamation Comment 21:**

(Section 5.3.6.1.6.3, Page 5-255)

*The PLP states that: Flannelmouth sucker, a sensitive species, may be present in Kanab Creek farther upstream and north of the pipeline alternative alignment. Speckled dace are present in Kanab Creek upstream from the town of Kanab. Upstream users of Kanab Creek in Utah divert flows for irrigation purposes, leaving it mostly dry in the summer season where the alignments would cross the creek.  
Sentence is unclear.*

**UDWRe Response:**

**The text has been revised to provide more clarity.**

**Reclamation Comment 22:**

(Section 5.3.6.3, Page 5-261 [sic])

*The PLP states that: At perennial streams, best management practices (BMPs) would be Implemented to avoid or minimize effects on water quality, aquatic resources and habitat.*

*Whose BMPs?*

**UDWRe Response:**

**LPP Project BMPs.**

**Reclamation Comment 23:**

(Sections 5.3.9.5.3 to 5.3.9.6, Pages 5-347 and 4-348)

*Sections 5.3.9.5.3 – 5.3.9.6 are repeated twice consecutively in the PLP.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 24:**

(Section 5.3.11.1, Page 5-432 [sic])

*Globally replace right-of-ways with rights-of-way.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 25:**

(Table 5-107, Page 5-433 [sic])

*In Table 5-107 the Mohave Desert Ecological Region title is repeated twice.*

*According to the table the total acres for the Colorado Plateau Ecological Region is 15,251.0 not 15,278.0. As a result, the grand total is also incorrect.*

**UDWRe Response:**

**Table 5-107 has been revised to address the comment.**

**Reclamation Comment 26:**

*(Section 5.3.11.1.1, Page 5-433 [sic])*

*The PLP states that: Developed lands in the surveyed area of potential effect totaled 349 acres, 263.8 acres of paved roads and 241.3 acres of graded roads.*

*It sounds like the paved roads and graded roads should add up to 349 acres. Suggest you say: Developed lands in the surveyed area of potential effect totaled 349 acres, paved roads totaled 263.8 acres and graded roads totaled 241.3 acres.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 27:**

*(Section 5.3.11.1.1.1, Page 5-435 [sic])*

*The PLP states that: The elevation of the Colorado Plateau in the project area of potential effect ranges from approximately 3,740 feet above mean sea level (MSL) to 5,695 feet MSL.*

*The acronym MSL has been used earlier in the document. Needs to be defined at first use.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 28:**

*(Section 5.3.11.1.1.1, Page 5-438 [sic])*

*Colorado Plateau Wash title*

*It needs a space before the title.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 29:**

*(Section 5.3.11.1.1.3, Page 5-440 [sic])*

*Big Game Crucial Ranges and Migration Routes. The Utah Division of Wildlife Resources (UDWLR) ...*

*The acronym for Utah Division of Wildlife Resources is UDWR.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 30:**

*(Table 5-108, Page 5-443 [sic])*

*The scientific name for Black-tailed jackrabbit is *Lepus californicus*.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 31:**

*(Table 5-110, Pages 5-447 and 5-448 [sic])*

*What do the asterisks mean in the third column?*

*In the Mallard row, second column, there should not be a period.*

**UDWRe Response:**

**The Great Basin Column of Table 5-110 has been deleted. There are no current alignments within the Great Basin Ecological System.**

**The text has been revised to address the comment.**

**Reclamation Comment 32:**

*(Section 5.3.11.2.2.1, Page 5-449 [sic])*

*The PLP states that: The pumping stations and hydroelectric generating stations would be operated using electronic Supervisory Control and Data Acquisition (SCADA) systems, minimizing disturbance from human presence and traffic noise.*

*SCADA was used previously but not defined until now. Needs to be defined at first use in document.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 33:**

*(Section 5.3.11.2.2.2, Page 5-451 [sic])*

*Desert Bighorn Sheep*

*The 3rd sentence of 1st paragraph: “right-of way” should be “right-of-way”.*

**UDWRe Response:**

**The text has been revised to “ROW”.**

**Reclamation Comment 34:**

*(Section 5.3.11.2.2.2, Page 5-452 [sic])*

*In the first paragraph right-of-way (ROW) acronym is defined but not used much in the document. Should be defined at first use.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 35:**

*(Section 5.3.11.2.2.3, Page 5-453 [sic])*

*The PLP states that: It is possible that some wildlife populations could be aaffected if adjacent...  
aaffected should be affected*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 36:**

*(Section 5.3.11.3, Page 5-458 [sic])*

*Protection, Mitigation and Enhancement Measures*

*Globally change “should” to “would” in Protection, Mitigation and Enhancement Measures.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 37:**

*(Section 5.3.12.2.6.1, Page 5-517 [sic])*

*The PLP states that: The Edison Electrical Institute (EEI) Avian Protection Plan Guidelines and Suggested Practices for Avian Protection on Power Lines should be employed on all LPP project transmission lines (EEI 2006, EEI 2010).*

*What changed?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 38:**

*(Section 5.3.12.2.6.1, Page 5-519 [sic])*



*The PLP states that: Three transmission lines would be subject to periodic inspection and maintenance in occupied Mohave desert tortoise habitat; this activity could cause adverse effects on desert tortoises.*

*How? By driving?*

**UDWRe Response:**

**Section 5.3.12.2.6.1 Operation and Maintenance Effects revised to read:**

**Three transmission lines would be subject to periodic inspection and maintenance in occupied Mojave desert tortoise habitat; this activity could cause adverse effects on desert tortoises due to potential increase in vehicle traffic on transmission line access roads.**

**Reclamation Comment 39:**

*(Section 5.3.12.2.7.1, Page 5-523 [sic])*

*The PLP states that: The facilities proposed under the No Lake Powell Water Alternative would not be constructed in primary California condor nesting... This alternative would not affect condor food... Operation and occasional maintenance of the No Lake Powell Water Alternative facilities would not affect the California condor... The No Lake Powell Water Alternative may affect, but is not likely to adversely affect California condor.*

*This conclusion contradicts the previous statements.*

**UDWRe Response:**

**Section 5.3.12.2.7.1 Effects Summary is revised to read:**

**The No Lake Powell Water Alternative would not affect California condor.**

**Reclamation Comment 40:**

*(Section 5.3.12.2.7.1, Page 5-524 [sic])*

*Southwestern Willow Flycatcher*

*The PLP states that: The No Lake Powell Water Alternative would likely adversely affect southwestern willow flycatcher and its designated critical habitat.*

*How?*

**UDWRe Response:**

**Section 5.3.12.2.7.1 is revised to read:**

**The No Lake Powell Water Alternative would likely adversely affect southwestern willow flycatcher and its designated critical habitat through potential diversion of Virgin River water.**

**Reclamation Comment 62:**

(Section 5.3.14.3.4.2, Page 5-686)

*Section [5.3.1.2 5.3.14.3.4.2 – UDWRe] – States “The only mitigation measure to avoid indirect impacts of converting prime farmland agricultural irrigation water to raw water supply for reverse osmosis treatment would be to compensate water right holders and users for the value of their irrigation water. Agreements would be negotiated individually between the water district and water right holders/users to determine acceptable compensation.”*

*Any water conversions from AG to Municipal would also require a change application to be filed on the water rights involved. Some indirect impacts would be examined during the change application process and any approval of these conversion change applications would likely include conditions to limit the indirect impacts.*

*Note: (A change is needed every time and AG WR is converted to municipal use. Reclamation would not likely be involved in the AG conversions described in this PLP, but the municipalities and various nearby water users would be involved.)*

**UDWRe Response:**

**Your comment has been noted.**

**Reclamation Comment 41:**

*(Section 5.3.16.1.3.1, Page 5-733 [sic])*

*Reclamation will work with the Park Service to make sure their needs are met. Reclamation does not have a specific management program for Glen Canyon National Recreation Area visual resources. For consistency in assessing potential effects on the visual landscape, VRM methodology was also used to assess effects on Reclamation land. The changes to Reclamation land should fall within Class II of the BLM’s Visual Resource Management system. The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.*

**UDWRe Response:**

**Your comment has been noted.**

**Reclamation Comment 42:**

*(General Comment – Cultural resources)*

*In general this seems to be an adequate discussion of the cultural resources of the project area. Though this reviewer lacks paleontological credentials, from more general scientific and historical perspectives, the paleontological context description also seems adequate to meet the needs of the EIS. For both the paleontological and cultural resources, the context provides enough high quality information to support meaningful determinations project’s effects on those resources. Of course, there must be an adequate body of inventory data to support the determination of specific direct, indirect, and cumulative effects of the pipeline.*

*In reference to the Reclamation's issues, the cultural resources elements fully meet our needs for protection of historic properties under the agency's jurisdiction.*

**UDWRe Response:**

**Your comment has been noted.**

**Reclamation Comment 43:**

*(Section 5.3.19.1.2, Page 5-831 [sic])*

*The geographic description would be much improved with the addition of a map putting the places named in their proper spatial relations.*

**UDWRe Response:**

**It is unclear to UDWRe to where in the text this comment is referring.**

**Reclamation Comment 44:**

*(Section 5.3.19.1.2.1, Pages 5-832 [sic] to 5-835 [sic])*

*This is a generally well-done section but is somewhat dated in its outlook. E.g. there is no reference to the recent work by the University of Oregon at the Paisley Caves, the work of C. Beck and G. Jones at the Sunshine Locality, or the current efforts at unraveling the complex chronology in the Old River region of western Utah. Perhaps the best indicator of this weakness is seen on p. 5-826 and the citation of Grayson's seminal Great Basin study in its 1993 edition. This work was extensively revised and published in 2011.*

**UDWRe Response:**

**An update was done to the cultural context for the 2014 version.**

**Reclamation Comment 45:**

*(Section 5.3.19.1.2.1, Page 5-855 [sic])*

*The last sentence of ~~2nd~~ (first – UDWRe) full paragraph: "Billet" should be "Billat" in citation.*

**UDWRe Response:**

**The misspelling has been corrected in the study report (Refer to 3.-21, 3.2.2.3 Late Archaic: 3000 to 1000 B.C.).**

**Reclamation Comment 46:**

*(Section 5.3.19.1.5.2, Page 5-954 [sic])*

*The last sentence of ~~1st paragraph~~ (second full paragraph – UDWRe): "domesticate" should be "domestic".*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 47:**

*(Section 5.3.22.3, Page 5-1095 [sic])*

*Protection, Mitigation and Enhancement Measures*

*Executive Order Environmental Justice issues would be reconciled, or mitigated, per consultations with the Kaibab Band of Paiute Indians.*

*In addition to the Kaibab Band of Paiute Indians are there other groups that need to be considered for Environmental Justice? Do Indian Trust Assets apply here?*

**UDWRe Response:**

**A specific study plan was not prepared nor required by FERC for Indian Trust Assets and Environmental Justice. Exhibit E of the license application will form the basis for preparing the draft EIS. Preparation of the FERC Draft EIS, with Reclamation and other DOI agencies participating as cooperating agencies, will include preparation of Indian Trust Asset and Environmental Justice sections.**

**Reclamation Comment 48:**

*(Section 5.3.22.3, Page 5-1095 [sic])*

*Cumulative Effects*

*The LPP project effects on power generation from Glen Canyon Dam releases would be measurable, projected to be \$58,401,000 in foregone power generation revenue (present value, 2010 \$) and this socioeconomic effect combined with these past, present and reasonably foreseeable future actions would result in measurable cumulative effects.*

*The power generation revenue estimate in 2010 should be updated.*

**UDWRe Response:**

**The power generation revenue estimate has been updated in Final Study report 10 – Socioeconomics and Water Resource Economics.**

**BLM Comment 410:**

*(General)*

*This Chapter only concentrates on community use of water. This needs to be expanded.*

**UDWRe Response:**

**The study report chapter meets the requirements of the approved study plan.**

**BLM Comment 411:**

*(General)*

*The formatting and content of this chapter is hard to follow and confusing. Discussing cumulative effects prior to direct and indirect effects is not something BLM is used to seeing.*

*Since the bulk of this project goes through BLM lands, BLM requests that when this moves to the EIS phase, a standard EIS format will be used.*

**UDWRe Response:**

**The document has been organized and written in accordance with FERC guidance.**

**BLM Comment 412:**

*(General)*

*The locations of access roads both for long term use and short term should be identified in the proposed action.*

**UDWRe Response:**

**Short term and long term access road locations would be identified in the detailed design phase of the project.**

**BLM Comment 413:**

*(General)*

*Under each alternative add a discussion of the impacts to the recreational use of the Fredonia SRMA and its associated RMZs and the Specialized and Primitive TMAs on the Arizona Strip Field Office.*

**UDWRe Response:**

**Impacts on recreational use of the Fredonia SRMA and associated RMZs and Specialized TMAs on the Arizona Strip Field Office have been addressed as applicable in the final study plan.**

**BLM Comment 414:**

*(General)*

*See provided species lists for Washington County.*

**UDWRe Response:**

**Table 3-2 State and Agency Wildlife Species of Concern includes the species list for Washington County.**

**BLM Comment 415:**

*(General)*

*Maps/Figures for Distribution and Critical Habitat for T&E and Sensitive Species?*

**UDWRe Response:**

**Refer to the study reports for T&E and sensitive species maps.**

**BLM Comment 416:**

(General)

*Maps/Figures of Ecological Systems (Vegetation)?*

**UDWRe Response:**

**Refer to Final Study Report 15 – Vegetation Communities.**

**BLM Comment 417:**

(General)

**Multiple Locations: General comments:** 1) Formatting for citing references is incorrect. For example, it should be “(NPS 2007)” vs. “(NPS, 2007)”. Also, when there is more than one citation from a given source for the same year (such as NPS 2009), each citation should have an associated letter – i.e., the first NPS 2009 would be “NPS 2009a”; 2) When referring to any national monument, national park, or national rec. area, do not call it “the” GCNRA or “the” GSENM. Simply say GSENM, VCNM or GCNRA; 3) Once acronyms are defined, do not redefine them later in the section.

**UDWRe Response:**

**The text has been revised to address the issues identified in the comment.**

**BLM Comment 418:**

(General)

*Preliminary Licensing. Alliances and associated names are very confusing and not straight forward. Please just use the vegetative common & scientific names or ecological site names*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 419:**

(Section 5.1.2, Page 5-5)

**Last Paragraph:** “Lands within the LPP Project watersheds and river basins include Federal lands open to public uses defined in resource management plans, state lands administered by Utah SITLA and Arizona’s State Land Department to enhance value and optimize economic return for beneficiaries such as public schools, state park lands, tribal lands belonging to several bands of Paiute Indians, water conservancy district lands used for water resources infrastructure, county and municipal lands used for public facilities, and private lands used for agriculture, livestock grazing, and residential, commercial and industrial development.” That whole paragraph is one run on sentence. Please edit so it makes better sense.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 420:**

(Section 5.1.2, Page 5-6)

*“The Project alignment is mostly within the Highway 89 corridor ROW in Utah and Arizona, the Highway 389 corridor ROW in Arizona, the Highway 59 corridor ROW in Utah, and the Navajo-McCullough Transmission Line corridor in Arizona.” If the project is taking place in the UDOT ROW next to HWY 89 this would be a good place to mention that. Identify any UDOT and ADOT ROWs along those other roads.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 421:**

(Section 5.1.2, Page 5-6)

*1st full paragraph, 2nd sentence: “Much of the land around these corridors is undeveloped and used for open space” ...this is not necessarily true. Each field office RMP document specifically calls out the land management – please refer to EACH RMP for the specific management prescriptions of those particular lands.*

**UDWRe Response:**

**UDWRe’s view is that the statement is accurate as written.**

**BLM Comment 422:**

(Section 5.1.2, Page 5-6)

*“Much of the land around these corridors is undeveloped and used for open space, livestock grazing and wildlife habitat.” Please note it is also used for a range of recreational uses.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 423:**

(Section 5.1.2, Page 5-6)

*“...these lands are primarily open space used for livestock grazing leases, wildlife habitat, highway and road corridors, and utility corridors.” Also include recreation areas and adjacency to wilderness designations.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 424:**

(Section 5.1.3, Pages 5-6 to 5-9)

*All of the information in this section, how does it pertain to the pipeline? It doesn’t read that water will be added to the pipeline from these smaller HUCs*



**UDWRe Response:**

**The section is meant to describe the major uses of water in the five watersheds that would be crossed by the LPP Project as part of the overall Chapter 5 purpose of describing the LPP Project lands and waters.**

**BLM Comment 425:**

*(Section 5.1.4, Page 5-9)*

**First Paragraph:** *“The LPP Project area contains several dams and reservoirs, including Lake Powell (Utah and Arizona) and Glen Canyon Dam in Arizona, and Jackson Flat Reservoir, Sand Hollow Reservoir and Dam, Quail Creek Reservoir and Dam, Quail Creek Diversion Dam, Kolob Reservoir and Dam, Gunlock Reservoir and Dam, and Ash Creek Reservoir and Dam in Utah. Figure 5-5 shows the locations of existing dams, reservoirs and diversions in the LPP Project area.” Recommended to say: The LPP project area contains several dams and reservoirs. The one’s to be affected by this project include Lake Powell/GLCA Dam, Jackson Flat Reservoir, and Sand Hollow/Quail Creek reservoir. Will the other dams be affected by this project? If not why bring them up.*

**UDWRe Response:**

**The intent of the paragraph is to identify project area dams and reservoirs. UDWRe’s view is that the text is adequate as written.**

**BLM Comment 426:**

*(Section 5.1.6, Page 5-14)*

**First Paragraph:** *“The LPP Project facilities would be situated between elevations 5,700 and 3,060 feet MSL, where air temperatures are warmer and most of the precipitation occurs as rain or snow that melts quickly.” Suggests... The LPP project facilities would be situated between elevations 3,060 and 5,700 feet MSL*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 427:**

*(Section 5.1.6, Page 5-14)*

**First Paragraph:** *“The primary communities near the LPP Project alignment are Page, AZ (elevation 4,300 feet MSL), Kanab, UT (elevation 4,970 feet MSL), and the St. George, UT metropolitan area (elevation 3,000 feet MSL). Mild air temperatures during the winter months attract people to visit and live in the St. George metropolitan area.” Delete “Metropolitan area” and “Mild air temperatures during the winter months attract people to visit and live in the St. George Metro area.” It’s irrelevant to the project.*

*“Annual average total precipitation in the primary communities near the LPP Project alignment ranges from 6.44 inches in Page to 13.49 inches in Kanab.” The inches of rain for St. George should be included in this paragraph.*

*“The relatively low average total precipitation in the desert climates that predominate in the LPP Project region translate to a need for water to meet the growing population demands.”*  
*“The relatively low average total precipitation in the desert climates that predominate in the LPP Project region...” This is a need statement, not appropriate in this paragraph.*

**UDWRe Response:**

**The suggested edits from the above comment have been incorporated.**

**BLM Comment 428:**

*(Section 5.1.7, Pages 5-14 and 5-15)*

*“Water quality in the watersheds crossed by the LPP Project is typical of undisturbed desert and southwest upland and mountain environments. Lake Powell water quality at depths of 100 to 150 feet near the water intake site has pH ranging from 6.9 to 8.4 units, dissolved oxygen concentrations ranging from 2.4 to 11.0 mg/L, and total dissolved solids (TDS) concentrations Lake Powell Pipeline 5-15 11/30/15 Preliminary Licensing Proposal Utah Board of Water Resources ranging from 384 to 653 mg/L (USBR 2008).  
Delete first sentence and begin paragraph with “Lake Powell water quality...” Water quality in the other watersheds does not matter.  
All this information about the other watershed H2O quality, how does this have anything to do with the water in the LLP? Is any of this water going into the LPP? If not why is it brought up? If not it should be deleted. Elaborate more on the water quality of Lake Powell itself.*

**UDWRe Response:**

**The suggested edit from the first paragraph from the above comment have been incorporated. Water quality in streams along the LPP Project alignments is included to address potential impacts from construction and operation during the life of the project. Water quality conditions and projections for future water quality in Lake Powell have been modeled by Reclamation and are incorporated into the final study report as an appendix.**

**BLM Comment 429:**

*(Section 5.2, Page 5-16)*

***Cumulative Effects, third paragraph.** BLM identifies numerous additional cumulative effects for other resources, including cultural, Native American issues, visual resources, etc on BLM managed lands.*

**UDWRe Response:**

**The resources listed as having the potential for cumulative effects were identified by FERC.**

**BLM Comment 430:**

*(Section 5.2, Page 5-16)*

*“...water resources, wildlife resources, threatened and endangered species, riparian vegetation and habitat, land use, and socioeconomic resources.” This is a rather short list of resources to*

*be affected cumulatively by such a large scale project. What about visuals? Noise? Vegetation? Recreation?*

**UDWRe Response:**

**Refer to the response to BLM Comment 429.**

**BLM Comment 431:**

*(Section 5.2, Page 5-16)*

*The preliminary analysis of cumulative effects is incorrect to not include cultural and Native American resources on the list of potentially cumulatively affected resources. The 89 corridor, along with plans to update to the Navajo Generating Station (which includes access roads and other construction within the Lake Powell Pipeline project area of potential effect), in addition to the Lake Powell Pipeline most definitely will cumulatively affect cultural resources and issues and concerns of Native American tribes. Please revise section 5.2 to show that an appropriate level of analysis of has been conducted on these resources (see the ethnographic studies that have been conducted, in addition to the class III inventory report, in addition to over four years of comments from consulting parties).*

**UDWRe Response:**

**Refer to the response to BLM Comment 429.**

**BLM Comment 432:**

*(Section 5.2.2, Page 5-17)*

**2nd paragraph:** *It says “The Commission did not identify specific resources...” BLM is the authority on BLM-managed public lands, not FERC. BLM has a ROD that it will make its decision on public lands. Please correct this concept throughout the document.*

**UDWRe Response:**

**Your comment is noted.**

**BLM Comment 433:**

*(Section 5.2.2, Page 5-17)*

*The text says “For any resource that the Commission staff identify as potentially having cumulative effects, the temporal scope will look 30 to 50 years into the future, based on the potential term of a new license, concentrating on the effect on the resource from reasonably foreseeable future actions.” According to the letter from Utah university economics professors, if the current LPP Utah law continues to be implemented, the WCWCD and KCWCD pay back of LPP construction and interest costs to Utah will likely need to exceed fifty years. As such, the temporal scope – at least for the socioeconomic effects from repayment of these costs – should exceed fifty years to take into account the realistic timeframe for full payment of all construction and interest costs. Likewise, some long-range NOAA climate projections beyond fifty years may be relevant, as they relate to the risks of prolonged droughts that may diminish the amount of water that the LPP would be able to deliver. Although perhaps of low probability, there is nevertheless the potentially foreseeable scenario of a combination of billions of dollars of*

*accumulated unpaid LPP debt and insufficient water deliveries, and/or excessive water costs, that make repayment unlikely and cause socioeconomic hardships. Indeed, especially serious and prolonged droughts may cause a Colorado River Compact “call” that could re-negotiate the upper and lower basin states’ respective water allocations, and thereby give higher priority to more senior water uses than the Utah LPP. If that occurred, Utah’s LPP water allocation on paper could figuratively “evaporate” just as water literally does in Lake Powell and other reservoirs.*

**UDWRe Response:**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**Refer to the responses to Gail Blattenberger’s Comments in the General Comments section.**

**Many impacts of the project will continue beyond the study period, including for example the significant economic benefits from this water supply that will occur annually into perpetuity, such as the addition of \$7.6 billion in personal income, \$3.2 billion in wages and salaries and \$7.4 billion in gross regional product in Washington County. In addition, Washington County is expected to generate \$19.6 billion in additional sales tax revenue and personal income taxes supported by the Lake Powell Pipeline between 2026 and 2060. The Colorado River System Simulation (CRSS) model addressed long term risks of prolonged drought. There is no foreseeable scenario under which billions of dollars of debt and insufficient water deliveries would cause socioeconomic hardships.**

**BLM Comment 434:**

*(Section 5.2.3, Page 5-18)*

***First Paragraph:** If the LPP Project would not affects a resource, there would be no potential for cumulative effects on that resource. If the LPP Project would not “affect” a resource... misspelled*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 435:**

*(Section 5.2.3.1, Page 5-18)*

*“The 1.9 million acre Grand Staircase-Escalante National Monument was established by presidential executive order in 1996.” GSENM was established by Presidential Proclamation using the Antiquities Act.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 436:**

*(Section 5.2.3.1, Page 5-18)*

*Is paragraph about ranching and tourism really a Historic or Past Project? “Ranching and grazing in southern Utah and northern Arizona continue to be significant components of the regional economy. “ What determines “significant” economically? Do the statistics back this up? Seems tourism and outdoor recreation should be included in this section. And what about retirement communities? Aren’t both Kanab and St George considered these?*

**UDWRe Response:**

**The text has been revised to address the comment. In this context what determines “significant” economically would likely vary from person to person.**

**BLM Comment 437:**

*(Section 5.2.3.1, Page 5-19)*

***Fourth Paragraph:** Highway 89 crosses through the southern portion of the monument. When referencing “the Monument” Monument should be capitalized.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 438:**

*(Section 5.2.3.1, Page 5-19)*

***Fourth Paragraph:** Ranching and grazing in southern Utah and northern Arizona continue to be significant components of the regional economy; however, the growth of tourism has created a large service economy, primarily because of the popular nearby national park and recreation areas including Glen Canyon, Grand Canyon, Zion and Bryce Canyon. Grazing is a component of the regional economy but is not a “significant” component. Please rephrase.*

**UDWRe Response:**

**UDWRe believes the text is adequate as written.**

**BLM Comment 439:**

*(Section 5.2.3.1, Page 5-19)*

***Fourth Paragraph:** “...; however, the growth of tourism has created a large service economy, primarily because of the popular nearby Amber Hughes national park and recreation areas*

*including Glen Canyon, Grand Canyon, Zion and Bryce Canyon.” GSENM should be included in that list as it is a recreation area*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 440:**

*(Section 5.2, Page 5-20)*

*Resources with potential to have cumulative effects must include cultural, Native American issues, Biological, Visual, etc.*

**UDWRe Response:**

**Refer to the response to BLM Comment 411.**

**BLM Comment 441:**

*(Section 5.2.3.2 – 5.2.3.11.4, Pages 5-20 to 5-29)*

*The manner in which information in this entire section is presented is confusing, hard to understand, and has little substance. It is unclear why information is presented in this manner – with the list of potential resources. Please address this.*

**UDWRe Response:**

**Refer to the response to BLM Comment 411.**

**BLM Comment 442:**

*(Section 5.2.3.1, Page 5-23)*

*The construction of a small trailhead and short road repaving project in the Red Cliffs NCA Recreation Area does not warrant being included in a section that strives to account for “past actions” in the LPP Project Area, within the context of a cumulative impacts analysis. The Recreation Area is outside the LPP project area and both projects involved minimal new environmental impacts.*

**UDWRe Response:**

**Refer to the response to BLM Comment 429.**

**BLM Comment 443:**

*(Pages 5-23, 5-24, and elsewhere)*

*Archaeological and ethnographic resources are listed with potential to have cumulative effects for these and other certain areas---very confusing when compared to the text on page 5- 16.*

**UDWRe Response:**

**Refer to the response to BLM Comment 429.**

**BLM Comment 444:**

*(Section 5.2.3.9, Page 5-24)*

*“Water Irrigation Company” should be “Kanab Irrigation Company”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 445:**

*(Section 5.2.3.11, Page 5-26 Picture)*

*This picture is difficult to see, when it is zoomed in, it becomes more blurry.*

**UDWRe Response:**

**A revised version of the picture has been inserted into the document to improve readability.**

**BLM Comment 446:**

*(Section 5.2.3.11.2, Page 5-27)*

*The discussion of the BLM planning process related to the preparation of Resource Management Plans for the Beaver Dam Wash and Red Cliffs National Conservation Areas and Amendment to the St. George Field Office RMP is outdated and is of questionable relevance to the LPP. The NCAs are outside the LPP Project Area and the amendment addresses two planning issues that have little or no overlap with this project.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 447:**

*(Section 5.2.3.11.2, Page 5-28)*

**First Paragraph:** *“The public is invited to provide information about at risk species and areas where conservation could be a priority and to nominate these areas for consideration as ACECs.” The statement, “the public is invited to provide information should either be deleted or a link for the readers of this document should be provided. Suggest deleting it but keep the last sentence to further clarify what is being discussed in this whole paragraph.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 448:**

*(Section 5.2.3.11.2, Page 5-28)*



**Second Paragraph:** “The RMP Amendment will also evaluate the area designations for motorized off-highway vehicle (OHV) travel and make needed revisions.” Delete the word “needed” in 1st sentence.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 449:**

(Section 5.2.3.11.2, Page 5-28)

**Second Paragraph:** “Public input is needed to identify the diverse OHV uses that are currently taking place on public lands, the presence of sensitive resources and public lands values, and potential conflicts with other uses.” Again the discussion of Public input is needed but a link is not provided. Is it appropriate to have this sentence in this document?

**UDWRe Response:**

**Contact information for BLM has been provided in the text.**

**BLM Comment 450:**

(Section 5.2.3.11.3, Page 5-28)

**Second Paragraph:** “The draft EIS is currently in preparation and is expected to be released for public comment and review in fall 2015.” Is this statement still current? The draft EIS is currently in preparation and is expected to be released for public comment and review in fall 2015

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 451:**

(Section 5.2.3.11.4, Page 5-29)

**Fourth Paragraph:** “NRCS is working with the Fredonia Natural Resource Conservation District and Town of Fredonia to complete engineering design and specifications for this high priority dam rehabilitation project. Construction is projected to begin in January 2012 and be completed by 2014.” Did this come to pass?

**UDWRe Response:**

**Construction has not yet started. The text has been revised to address the comment.**

**BLM Comment 452:**

(Section 5.2.3.11.4, Page 5-29)

**Fourth Paragraph:** “The original FRS was constructed by the Soil Conservation Service (now the Natural Resources Conservation Service – NRCS) in 1973” The original FRS was

*constructed by the Natural Resources Conservation Service – NRCS (then Soil Conservation Service) in 1973*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 453:**

*(Section 5.2.3.11.4, Page 5-29)*

***Fourth Paragraph:*** *The original FRS has developed safety deficiencies and inadequacies during the past 38(43?) years related to embankment cracking and emergency spillway capacity.*

**UDWRe Response:**

**The text has been revised to reflect the comment.**

**BLM Comment 454:**

*(Section 5.3)*

***General Comment:*** *There should be a discussion of the effects of the no action alternative included in every resource section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 455:**

*(Section 5.3, Page 5-30)*

*Suggest changing this section heading to “Environmental Effects of Proposed Action and Alternatives”.*

**UDWRe Response:**

**The document has been organized and written in accordance with FERC guidance.**

**BLM Comment 456:**

*(Section 5.3, Page 5-30)*

*Regional geology. Should be Great basin & range provinces.*

**UDWRe Response:**

**The Basin and Range is a physiographic province defined by extensional tectonic forces that features horst-graben structures. The Great Basin is a hydrologic feature within the Basin and Range province, defined by enclosed drainage collection that does not flow out of the basin. It is correct to say that the project area includes parts of the Colorado Plateau and Basin and Range physiographic provinces. No change to the text is necessary.**

**BLM Comment 457:**

(Section 5.3.1.1.1, Page 5-30)

**Last Paragraph:** “Locations for borrow material (pipe and penstock bedding) were identified based on U.S. Geological Survey (USGS) topographic maps and aerial photos, visual observations along the alignments, and recommendations from local contractors. Thirty-six potential borrow sites were inspected and evaluated along the LPP Project alignments, including existing gravel pits on public and private land. Gravel pits on public land were excluded as sources for pipe and penstock bedding supply because these sites do not contain suitable rock materials for bedding and no additional public land gravel pits with suitable bedding materials were identified. Figures 5-16 and 5-17 show locations of commercial gravel pits with suitable bedding materials (borrow) for pipe and penstock construction along the LPP alignments. Approximately 34 percent of the Proposed Action pipeline and penstock alignment trenches would involve bedrock excavation (2,232,800 cubic yards produced), resulting in developing sufficient rock sources for crushing and use as pipe and penstock bedding materials (2,081,046 cubic yards required). Approximately 16 percent of the Existing Highway Alternative pipeline and penstock alignment trenches would involve bedrock excavation (981,700 cubic yards produced), resulting in developing insufficient rock sources for crushing and use as pipe and penstock bedding materials (2,114,181 cubic yards required). Therefore, the Existing Highway Alternative would require 1,132,481 cubic yards of additional bedding materials to be imported from commercially available sources and/or development of bedding materials from additional undisturbed public land.

Approximately 34 percent of the Southeast Corner Alternative pipeline and penstock alignment trenches would involve bedrock excavation (1,579,855 cubic yards produced), resulting in developing insufficient rock sources for crushing and use as pipe and penstock bedding materials (1,696,384 cubic yards required). Therefore, the Southeast Corner Alternative would require 116,529 cubic yards of additional bedding materials to be imported from commercially available sources and/or development of bedding materials from additional undisturbed public land. All of the LPP alternatives would involve excavating clay borrow material from WCWCD land near Bench Lake for constructing the forebay reservoir lining and embankment dams and the afterbay embankment dam.”

This information was not mentioned in the proposed action in Chapter 3. It should be mentioned there as this is an important part of the project.

**UDWRe Response:**

Discussion of using bedding material from the trench excavation has been included in Sections 3.1.1.2.1 and 3.1.1.3.1.

**BLM Comment 458:**

(Section 5.3.1.1.2, Page 5-31)

*Second Sentence:* “The corridor extended” change to “The corridor extends”

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 459:**

*(Table 5-4, Page 5-34)*

*Station 1745+00 does not have a rock type and lists only the Cockcomb Monocline. Why is there no other information on the rock type or why is this location included in a table of Rock Characteristics?*

**UDWRe Response:**

**Table 5-4 has been revised to include rock type for the Cockscomb feature of the East Kaibab Monocline.**

**BLM Comment 460:**

*(Table 5-4, Pages 5-34 to 5-38)*

*A legend or explanation for the abbreviations used in the table should be included.*

**UDWRe Response:**

**A legend has been included for the abbreviations in Table 5-4.**

**BLM Comment 461:**

*(Table 5-4, Pages 5-46 to 5-51)*

*A legend or explanation for the abbreviations used in the table should be included.*

**UDWRe Response:**

**Refer to the response to BLM Comment 460.**

**BLM Comment 462:**

*(Section 5.3, Page 5-30)*

*Lines 3 and 4-5: Delete “on resources”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 463:**

*(Section 5.3.1, Page 5-30)*

*There is no discussion in this section on biological soil crusts (cryptobiotic soils). This needs to be added since these soils would be disturbed/removed along much of the pipeline corridor.*

**UDWRe Response:**

**A discussion of cryptobiotic soils has been added to the text.**

**BLM Comment 464:**

(Section 5.3.1.1.1, Page 5-30)

**Second paragraph, last sentence.** "... Sevier fault near the Coral Pink Sand Dunes State Park. Remove the word "the".

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 465:**

(Section 5.3.1.1.2, Page 5-31)

**First paragraph, second sentence.** Change "The corridor extended" to "The corridor extends..."

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 466:**

(Section 5.3.1.1.2, Page 5-31)

"The corridor extend 200 feet on either side of each alternative alignment, and 1,000 feet on each side of each alignment for evaluating potential effects on important structures and mineral resources." 1) It is not clear why there is a difference in the widths of the corridors. 2) Explain what the important structures are.

**UDWRe Response:**

The corridor extended 200 feet on either side of the alternative alignments to evaluate an area on either side of the pipeline that might reasonably be affected during construction or operation. A 1,000 foot corridor was evaluated on either side of the alignments for effects on important structures and mineral resources because structures and access to mineral resource extraction facilities could be affected by blasting or excavation, or access could be limited during construction. Important structures are defined in Section 2.4.6 of the Revised Draft Geology and Soils Study Report as features such as wells, utility alignments, and buildings, and excludes common features such as roads and power or telephone poles. An explanation has been added to the text to clarify the intent of the corridors.

**BLM Comment 467:**

(Section 5.3.1.1.2, Page 5-31)

**Second paragraph, first sentence:** What is meant by "would not materially affect geology and soil resources?"

**UDWRe Response:**

The transmission line alignments were not evaluated for impacts as part of the Geology and Soils Study because the construction and maintenance of transmission lines will involve relatively little disturbance of geology and soil. Best Management Practices will

be followed to minimize erosion from maintenance roads. The disturbance would consist of auguring for poles, preparation of tower foundations, and improvement of existing dirt roads or construction of roads on the area disturbed for pipeline construction. This has been clarified in the text. Refer to also the response to BLM Comment 468 below.

**BLM Comment 468:**

*(Section 5.3.1.1.2, Page 5-31)*

**Second paragraph, first sentence.** “The Transmission Line Alternatives described in Chapter 3 are not included in this section because these alternatives would not materially affect geology and soil resources.” This statement is not true – there **WOULD** be impacts to soils from at least construction of the transmission lines. Need to add this to the impacts analyses for the various LPP alternatives.

**UDWRe Response:**

For all action alternatives, the Transmission Line Alternatives would include the following activities that would affected geology and soil resources:

- Auguring for placement of poles
- Construction of foundations for towers
- Improvement of existing roads for access

Auguring for placement of holes is a localized activity that will disturb and permanently displace a small area at each pole location. Construction of tower foundations will disturb and permanently displace a slightly larger area for each foundation. Existing roads will be used for construction and maintenance access, including public highways, gravel roads, and dirt roads. Some roads, primarily “two-track” dirt roads or gravel roads in poor condition, will be improved by widening to 10 feet where too narrow for safe operation. This would widen the road by up to two feet, or 25 percent. These represent both construction impacts and operation impacts. Section 5.3.1.1.2 has been modified to address this.

**BLM Comment 469:**

*(Section 5.3.1.1.3, Page 5-31)*

**First paragraph, fourth sentence.** Add the word “alignment” after Proposed Action.

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 470:**

*(Section 5.3.1.1.3, Page 5-31)*

**First paragraph, the last sentence:** Delete: “These fault crossings are not located near populated areas, decreasing the potential risk of effects associated with a pipeline rupture.” This section is “geology and soils” not “public health and safety”.

**UDWRe Response:**

The potential impacts of the pipeline on geology and soils are related to public health and safety. Note that the approved significance criteria for geologic hazards, unstable slopes, or important structures all address potential impacts to humans. The construction, O&M, and repair procedures for pipeline crossings all will be affected by proximity to human populations. It is appropriate to include this sentence in the Geology and Soils Study Report. No change to the text is needed.

**BLM Comment 471:**

(Section 5.3.1.1.5, Page 5-33)

*First paragraph, third sentence.* Add the word “alignments” after “...LPP alternatives” and change “alternatives” to “alternative”.

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 472:**

(Section 5.3.1.1.7, Page 5-54)

*Geologic Hazards to Human Health and Safety.* Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project from geology/soils. Thus, delete this section.

**UDWRe Response:**

Refer to the response to BLM Comment 470. Geologic hazards are important to evaluate as part of this study precisely because they can pose a potential danger to human life, health, safety, and property. No change to the text is needed.

**BLM Comment 473:**

(Section 5.3.1.1.8, Page 5-54)

*Important Structures and Mineral Resources.* Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, remove the part of this section on “Important Structures.”

**UDWRe Response:**

Refer to the response to BLM Comments 470 and 472. No change to the text is needed.

**BLM Comment 474:**

(Section 5.3.1.1.9, Page 5-54)

*First paragraph:* “Thirty-six potential spoil sites were inspected and evaluated along the LPP Project alignments, including existing gravel pits on public and private land. Active commercial gravel pits on private lands were excluded from consideration for spoil disposal because these pits would have insufficient disposal space and spoil disposal would disrupt ongoing operations. Figures 5-16 and 5-17 show gravel pits along and in the vicinity of the LPP alignments suitable



*for spoil disposal. The Proposed Action would result in an estimated 2,817,165 cubic yards of spoil material requiring disposal outside of the ROW.”*

*3rd line of this section references “thirty-six potential borrow sites” as being evaluated for use in the LPP Project. However, there is no mention of this included in Chapter 3 - it needs to be since this is part of the alternatives. The entire description and specifications discussed in this paragraph on Borrow and Spoil should be included in Chapter 3.*

**UDWRe Response:**

**Use of these potential borrow and spoil sites is no longer proposed; the current assumption is that all pipeline and penstock bedding and backfill material will be derived from materials excavated or blasted during pipeline construction, and spoils will be spread within the ROW. The text has been modified to remove this discussion.**

**BLM Comment 475:**

*(Section 5.3.1.1.9, Page 5-54)*

***First paragraph:** Active commercial gravel pits on private lands were **excluded from consideration** for spoil disposal because these pits would have insufficient disposal space **and spoil disposal would disrupt ongoing operations**. This is a bias, this project and this component is a disruption to all the lands involved for this project.*

**UDWRe Response:**

**The disruption to existing commercial operations is not the same as disruption to lands. If an element of the project can be executed in a way that is less disruptive to human economic enterprises, that is generally preferable as defined in the approved significance criteria identified in Section 4.1.6 of the Revised Draft Geology and Soils Study Report and in the Geology and Soils Study Plan. It would be a bias to say that no disruption of lands may occur; if this were the significance criterion for all projects on public lands, no project on public lands could ever be allowed. No change to the text is needed.**

**BLM Comment 476:**

*(Figure 5-16, Page 5-62)*

*Where are the borrow spoil locations SD-3 and SD-4 located? The large borrow and spoil sites should be included in action alternative descriptions. These elements would have potential to effect visual resources.*

**UDWRe Response:**

**Figure 3-15 of the Revised Draft Geology and Soils Study Report shows the locations of SD-3 and SD-4. However, the use of these borrow and spoil sites is no longer proposed, so additional discussion of potential borrow and spoil sites is not warranted. The text has been modified to remove the discussion of borrow and spoil sites. Refer to the response to BLM Comment 474.**

**BLM Comment 477:**

*(Section 5.3.1.1.9, Page 5-64)*

***Fourth through seventh lines on this page discuss:***

- “Locations for spoil disposal”; and
- Existing gravel pits on public land

*However, there is no mention of this included in Chapter 3 – it needs to be since this is part of the alternatives.*

***Sixth through eleventh lines discuss “Thirty-six potential spoil sites were inspected and evaluated along the LPP Project alignments, including existing gravel pits on public and private land.” Then pits on private lands “were excluded from consideration ... because these pits ... would disrupt ongoing operations.” This same would be true for pits on public lands. Please acknowledge that here. Again, the location of sites considered for use (whether it is to acquire material or to dispose of material) must be identified now in Chapter 3.***

**UDWRe Response:**

**Refer to the response to BLM Comment 474.**

**BLM Comment 478:**

*(Section 5.3.1.1.9, Page 5-64)*

***First paragraph, last sentence.*** *Where are the identified spoil disposal sites? This must be identified now in Chapter 3.*

**UDWRe Response:**

**This was identified in the Geology and Soils Study Report. However, the discussion is no longer relevant; see the response to BLM Comment 474.**

**BLM Comment 479:**

*(Section 5.3.1.1.10, Page 5-65)*

***2nd complete paragraph on page, 4th line:*** *“These inflows would likely be collected by a system of drains and sumps...” Would it or wouldn’t it? It seems as though this should be known at this point in the PLP process.*

**UDWRe Response:**

**This is not the detailed design phase; such processes will be determined during the detailed design phase.**

**BLM Comment 480:**

*(Section 5.3.1.1.11, Page 5-65)*

***First paragraph, first sentence:*** *Delete “(HC)” - just use “Hurricane Cliffs” instead.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 481:**

*(Section 5.3.1.1.11, Page 5-65)*

*Second paragraph, first sentence (occurs in 2 places). Type out Hurricane Cliffs instead of using the acronym “HC”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 482:**

*(Section 5.3.1.1.11, Page 5-65)*

*Third paragraph: “Groundwater inflows would be collected in the sumps and then pumped to the surface where it would be discharged into portable water tanks and particles settled and removed prior to disposal to minimize effects during construction and to protect water quality in the reservoir.”*

*Will these groundwater inflows be added to the LPP? If so it should be mentioned in the proposed action.*

**UDWRe Response:**

**Groundwater inflows will not be added to the LPP. Refer to also the response to FERC Comment 26.**

**BLM Comment 483:**

*(Section 5.3.1.1.11, Page 5-66)*

*Fifth paragraph, first sentence. Change “several hundreds of feet” to “several hundred feet.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 484:**

*(Section 5.3.1.1.11, Page 5-66)*

*3rd complete paragraph on page, first sentence: Change “nature associated to the normal” to “nature associated with the normal.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 485:**

*(Section 5.3.1.1.11, Page 5-67)*

*4th line on page: Type out “Hurricane Cliffs” instead of using the “HC” acronym.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 486:**

*(Section 5.3.1.1.11, Page 5-67)*

*1st line of 2nd complete paragraph on page: Change “will” to “would”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 487:**

*(Section 5.3.1.1.11, Page 5-67)*

*4th complete paragraph on page:*

- 1) 2nd line: Change semicolon to a comma.*
- 2) 4th line: Change “will” to “would”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 488:**

*(Section 5.3.1.2.1.3, Page 5-68)*

*3rd line: Change “damage of major human structures” to “damage to human structures.”*

*6th line: “Long-term loss of important wildlife habitat.” What is considered “important”?*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 489:**

*(Section 5.3.1.2.1.5, Page 5-70)*

***Geologic Hazards to Human Health and Safety.** Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project from geology/soils. Thus, delete this section.*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 490:**

*(Section 5.3.1.2.1.6, Page 5-70)*

***Important Structures and Mineral Resources.** Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts*

*from the project on other resources. Thus, remove the part of this section on “Important Structures.”*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 491:**

*(Section 5.3.1.2.1.6, Page 5-70)*

***First sentence.** “Construction or operation effects on important human structures” Please define the word “important.”*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 492:**

*(Section 5.3.1.2.1.7, Page 5-70)*

*“Construction effects associated with disposal (spoil) of excess excavated material would be significant if spoil disposal would cause substantial changes in runoff patterns, turbid runoff that would discharge to rivers, streams, or lakes, or create unstable slope conditions.” The large borrow and spoil sites should be included in action alternative descriptions. These elements would have potential to effect visual resources.*

**UDWRe Response:**

**Refer to the response to BLM Comment 474. The impacts caused by distribution of spoils within the ROW of the pipeline will be mitigated by Best Management Practices. Visual Resources are addressed in a separate study report.**

**BLM Comment 493:**

*(Section 5.3.1.2.2.3, Page 5-70)*

***First sentence.** Remove: “various alignments, including the” and insert “alignment” after “Proposed Action”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 494:**

*(Section 5.3.1.2.2.3, Page 5-70)*

***Fifth sentence.** “Site stabilization measures.” Such as? These would be unlikely to stabilize unstable slopes. Construction would only exacerbate the problem.*

**UDWRe Response:**

Site stabilization measures will be developed during the detailed design phase of the project and are not addressed at this stage. The reviewer cannot say with confidence that such measures would be “unlikely to stabilize unstable slopes. Construction would only exacerbate the problem” because such measures are yet to be developed and would occur after detailed design.

**BLM Comment 495:**

*(Section 5.3.1.2.2.3, Page 5-71)*

*1st line on page (last sentence of section): Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 496:**

*(Section 5.3.1.2.2.4, Page 5-71)*

*Last sentence. What are some examples of the design considerations?*

**UDWRe Response:**

**As stated in the text, examples of design considerations include overexcavation and placement of additional bedding.**

**BLM Comment 497:**

*(Section 5.3.1.2.2.4, Page 5-71)*

*Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 498:**

*(Section 5.3.1.2.2.5, Page 5-71)*

*Geologic Hazards on Human Health and Safety. Remember, this is the “Impacts to Geology and Soils” section (not human health and safety).*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 499:**

*(Section 5.3.1.2.2.5, Page 5-71)*

*Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 500:**

*(Section 5.3.1.2.2.6, Page 5-71)*

**Important Structures and Mineral Resources.** Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS, or impacts from the project on other resources. Thus, remove the part of this section on "Important Structures." Last sentence. Change "effects and no" to "or."

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 501:**

*(Section 5.3.1.2.2.7, Page 5-71)*

*"Special blasting methods may need to be employed to minimize the transfer of energy through rock and soil to the structures. At Big Water, most of the town overlies several feet of soil. This would help to absorb and therefore help minimize the transfer of blasting energy to the buildings. Use of lower-energy blasting methods at closer spacings would minimize the effects of blasting near structures. Therefore, no measurable effects and no significant effects would occur."*

*Blasting methods and locations should be discussed in the proposed action. There needs to be more of an explanation as to a no measurable or no significant effect would occur with blasting.*

**UDWRe Response:**

**Specific blasting methods and locations have not yet been developed and will be specific to surface and subsurface locations at each location to minimize the effects of blasting. Subsurface conditions have not been characterized. It is not possible based on existing information to provide detailed blasting methods and locations.**

**BLM Comment 502:**

*(Section 5.3.1.2.2.6, Page 5-71)*

**Fourth sentence.** Where are these existing gravel pits on public and private lands? The location of sites considered for borrow and spoil **MUST** be identified NOW in Chapter 3.

**UDWRe Response:**

**Refer to the response to BLM Comment 478.**

**BLM Comment 503:**

*(Section 5.3.1.2.2.8, Page 5-72)*

**3rd line on page:** Change "will" to "would".

**UDWRe Response:**



**The suggested edit has been incorporated.**

**BLM Comment 504:**

*(Section 5.3.1.2.2.8, Page 5-72)*

*“The local groundwater drawdown effect would be temporary (occurring through Intake Pump Station underground construction) and would recover to match the unaffected sandstone aquifer levels following construction completion. The drawdown effects would be short-term and localized, and would have no effect on other wells in the vicinity used for water supply.”*

*Why wouldn't this drawdown effect be permanent, since there would be new trenches installed that could affect groundwater? How is it known for certain that “the drawdown effects have no effect on other wells in the vicinity,” since groundwater connectivity is so complex?*

**UDWRe Response:**

**Groundwater would be drawn down temporarily during construction. After the tunnels accessing Lake Powell are constructed, flow into the Intake pump system would come from Lake Powell because water flows along the path of least resistance, and drawdown around the Intake Pump Station would be limited to the water level in the shaft which will not draw down measurably from pumping once connected to the lake. Trenching in the vicinity of the Intake Pump Station will be well above the water table, hence no impacts to groundwater would occur. No change to the text is needed.**

**BLM Comment 505:**

*(Section 5.3.1.2.3.1, Page 5-72)*

*Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 506:**

*(Section 5.3.1.2.3.2, Page 5-73)*

*First paragraph, last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 507:**

*(Section 5.3.1.2.3.2, Page 5-73)*

*Insert space between first and second paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 508:**

*(Section 5.3.1.2.3.2, Page 5-73)*

*Second paragraph, last sentence (5th/6th lines on page 5- 73): Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 509:**

*(Section 5.3.1.2.3.3, Page 5-73)*

*First sentence. Remove “various alignments, including the” and insert “alignment” after “Proposed Action”. Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**The suggested edit to the first sentence has been incorporated into the text. UDWRe’s view is that the last sentence is appropriate as written.**

**BLM Comment 510:**

*(Section 5.3.1.2.3.4, Page 5-73)*

*Last sentence: 1) What are examples of the design considerations? 2) Change “effects and no” to “or.”*

**UDWRe Response:**

**Examples of design considerations include overexcavation and the placement of additional bedding. UDWRe’s view is that the end of the sentence is appropriate as written.**

**BLM Comment 511:**

*(Section 5.3.1.2.3.5, Page 5-73)*

*Geologic Hazards on Human Health and Safety. Remember, this is the “Impacts to Geology and Soils” section (not impacts to human health and safety). “Geologic hazards on human health and safety during operations and maintenance would be minimized by following standard design and construction practices. Therefore, no measurable effects and no significant effects would occur.” This needs to be described more... it not an adequate analysis.*

*Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**Refer to response to BLM Comments 470 and 472. UDWRe’s view is that the last sentence is appropriate as written.**

**BLM Comment 512:**

(Section 5.3.1.2.3.6, Page 5-73)

**Important Structures and Mineral Resources.** Remember that this section (5.3.1) is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. **1st line:** Change “effects and no” to “or.” Explain why there would be “No measurable effects and no significant effects would occur in connection with the Proposed Action operations and maintenance.”

**UDWRe Response:**

**Refer to response to BLM Comments 470 and 472.**

**BLM Comment 513:**

(Section 5.3.1.2.3.7, Page 5-73)

**1st line:** Change “effects and no” to “or.” Explain why there would be “No measurable effects and no significant effects would occur in connection with the Proposed Action operations and maintenance.”

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 514:**

(Section 5.3.1.2.3.8, Page 5-73)

*Much of the second half of this section discusses impacts to groundwater ... remember that this is the “Impacts to Geology and Soils” section, not impacts to groundwater (that is Section 5.3.5). Please revise this analysis accordingly.*

**UDWRe Response:**

**The text has been revised to remove the discussion of groundwater impacts.**

**BLM Comment 515:**

(Section 5.3.1.2.3.9, Page 5-74)

*Much of the second half of this section discusses impacts to groundwater ... remember that this is the “Impacts to Geology and Soils” section, not impacts to groundwater (that is Section 5.3.5). Please revise this analysis accordingly.*

**UDWRe Response:**

**Refer to the response to BLM Comment 514.**

**BLM Comment 516:**

(Section 5.3.1.2.4.2, Page 5-74)

*Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 517:**

*(Section 5.3.1.2.4.3, Page 5-74)*

*Last sentence. What are some examples of appropriate precautions?*

**UDWRe Response:**

**Appropriate precautions include providing an adequate depth of backfill over the pipe. This would be addressed during the detailed design phase of the project.**

**BLM Comment 518:**

*(Section 5.3.1.2.4.4, Page 5-74)*

*Last sentence. What are some examples of the design considerations? Change “effects and no” to “or.”*

**UDWRe Response:**

**Design considerations include overexcavation and the placement of additional bedding. UDWRe’s view is that the text in the last sentence is appropriate as written.**

**BLM Comment 519:**

*(Section 5.3.1.2.4.5, Page 5-74)*

*Geologic Hazards on Human Health and Safety. Remember, this is the “Impacts to Geology and Soils” section (not human health and safety).*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 520:**

*(Section 5.3.1.2.4.5, Page 5-75)*

*1st line on page: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 521:**

*(Section 5.3.1.2.4.6, Page 5-75)*

**Important Structures and Mineral Resources.** Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. **Last sentence.** Change “effects and no” to “or.” What are examples of the appropriate precautions?

**UDWRe Response:**

**Refer to response to BLM Comments 470 and 472. UDWRe’s view is that the text in the last sentence is appropriate as written. Appropriate precautions will be addressed as BMPs during detailed design.**

**BLM Comment 522:**

(Section 5.3.1.2.4.7, Page 5-75)

**1st paragraph:** Text states that “Rock excavated along the alignment suitable for crushing would meet 46 percent of the pipeline and penstock bedding requirements, and approximately 1,132,500 cubic yards of bedding material would need to be imported from commercial gravel pits.”

Please explain where this bedding material will be obtained from. This is a lot of material. BLM agrees with the assessment that “The bedding material requirements and the associated land disturbance under the Existing Highway Alternative would be a significant effect on existing commercial gravel pits and currently undisturbed land areas suitable for producing construction bedding materials.”

**UDWRe Response:**

**Refer to the response to BLM Comment 474.**

**BLM Comment 523:**

(Section 5.3.1.2.4.7, Page 5-75)

**Second paragraph, first sentence.** “Existing gravel pits on public and private lands...” Please identify where these locations are. Can’t say “the Existing Highway Alternative would have no significant effects resulting from spoil material disposal” until it is known where these locations are.

**UDWRe Response:**

**Refer to the response to BLM Comment 474.**

**BLM Comment 524:**

(Section 5.3.1.2.5.1, Page 5-75)

**Last sentence.** Change “effects and no” to “or.”

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 525:**

(Section 5.3.1.2.5.3, Page 5-75)

*Last sentence. Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 526:**

(Section 5.3.1.2.5.4, Page 5-76)

*Last sentence. What are some examples of the design considerations? Change “effects and no” to “or.”*

**UDWRe Response:**

**Design considerations include overexcavation and the placement of additional bedding. UDWRe’s view is that the text in the last sentence is appropriate as written.**

**BLM Comment 527:**

(Section 5.3.1.2.5.5, Page 5-76)

*Geologic Hazards to Human Health and Safety. “No measurable effects and no significant effects would occur.” Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**As stated in Section 5.3.1.1.7, no geologic hazards were identified that would be caused or exacerbated by the project. Section 5.3.1.1 of the text addresses the Affected Environment, where conditions and analysis are summarized, and Section 5.3.1.2 addresses Environmental Effects, including significance criteria and whether or not conditions meet those criteria. Section 5.3.1.2 does not present analytical methods. UDWRe’s view is that that no change to the text is needed.**

**BLM Comment 528:**

(Section 5.3.1.2.5.6, Page 5-76)

*Important Structures and Mineral Resources. Explain why no measurable or significant effects (can’t just say there are none without describing how that conclusion was reached). Change “effects and no” to “or.”*

**UDWRe Response:**

**Refer to the response to BLM Comment 527.**

**BLM Comment 529:**

(Section 5.3.1.2.5.7, Page 5-76)

*Borrow and Spoil. Explain why no measurable or significant effects (can’t just say there are none without describing how that conclusion was reached). Change “effects and no” to “or.”*

**UDWRe Response:**

**Refer to the response to BLM Comment 527.**

**BLM Comment 530:**

*(Section 5.3.1.2.6, Page 5-76)*

***Southeast Corner Alternative Construction Effects.***

- ***First paragraph, first sentence.*** “...on human health and safety, important structures and mineral resources...” Remember, this is the “Impacts to Geology and Soils” section (not impacts on human health and safety).
- ***First paragraph, first sentence.*** Remember that Section 5.3.1 is impacts of the project on geology and soils not the impacts to “important structures” FROM GEOLOGY/SOILS, or impacts from the project on other resources. Thus, remove the part of this sentence on “Important Structures.”

**UDWRe Response:**

**Refer to the response to BLM Comments 470 and 472.**

**BLM Comment 531:**

*(Section 5.3.1.2.6.1, Page 5-76)*

***Southeast Corner Alternative Construction Effects.***

- ***First paragraph, second sentence.*** “Rock excavated along the alignment suitable for crushing would meet 93 percent of the pipeline and penstock bedding requirements, and approximately 116,500 cubic yards of bedding material would need to be imported from commercial gravel pits.” WHERE are these gravel pits located? (Need to identify them now.)
- ***First paragraph, second sentence.*** “Rock excavated along the alignment suitable for crushing would meet 93 percent of the pipeline and penstock bedding requirements, and approximately 116,500 cubic yards of bedding material would need to be imported from commercial gravel pits. The Southeast Corner Alternative would require expanding additional gravel resources to meet construction demands for the LPP pipeline and penstock alignments. The bedding material requirements and the associated land disturbance under the Southeast Corner Alternative would have a significant effect on existing commercial gravel pits and currently undisturbed land areas suitable for producing construction bedding materials.” Would this really be a significant impact?
- ***Second paragraph, first sentence.*** “Existing gravel pits on public and private lands...” Where are these gravel pits located? Need to identify them NOW.

**UDWRe Response:**

**Refer to the response to BLM Comments 474, 523 and 527.**

**BLM Comment 532:**

*(Section 5.3.1.2.8, Page 5-77)*



*The analysis in this section repeatedly describes potential impacts on the “Warner Valley Reservoir” from the Proposed Action and No Action but fails to note that this is a future, as yet undeveloped, project. There is no section preceding this that identifies “Reasonably Foreseeable Future Actions”, another requirement for a competent Cumulative Impacts Analysis.*

**UDWRe Response:**

**The Warner Valley Reservoir is a reasonably foreseeable future action under the No Lake Powell Water Alternative analysis. The reviewer may be accustomed to a slightly different use of terminology within the NEPA process used by BLM, but FERC recognizes that the No Lake Powell Water Alternative addresses reasonably foreseeable future actions that would occur without the Project. UDWRe’s view is that no revision to the text is needed.**

**BLM Comment 533:**

*(Section 5.3.1.2.8, Page 5-77)*

***Southeast Corner Alternative Operation and Maintenance Effects.***

- ***First paragraph, first sentence.*** “...on human health and safety, important structures and mineral resources...” Remember that this is the “Impacts to Geology and Soils” section (not “impacts on human health and safety”). It is also ***not*** the impacts to “important structures” FROM GEOLOGY/SOILS, or impacts from the project on other resources. Thus, remove the part of this sentence on “Important Structures.”

**UDWRe Response:**

**Refer to the response to BLM Comments 470 and 472.**

**BLM Comment 534:**

*(Section 5.3.1.2.8.1, Page 5-77)*

***Last sentence.*** “Therefore, no effects are expected to occur during construction.” Construction of what? The reservoir? Please clarify.

**UDWRe Response:**

**The text has been modified to clarify that construction refers to construction of the Warner Valley Reservoir and associated features.**

**BLM Comment 535:**

*(Section 5.3.1.2.8.3, Page 5-77)*

***Third sentence.*** What are examples of site stabilization measures? Please provide, to give substance to this analysis. ***Last Sentence:*** Change “effects and no” to “or.”

**UDWRe Response:**

**Site stabilization measures for the Warner Valley Reservoir could include rock bolts and anchoring, and blasting, excavation, removal, and re-contouring of potential unstable slopes. UDWRe’s view is that the last sentence is appropriate as written.**

**BLM Comment 536:**

*(Section 5.3.1.2.8.4, Page 5-77)*

*Last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 537:**

*(Section 5.3.1.2.8.5, Page 5-77)*

*Geologic Hazards on Human Health and Safety. Remember, this is the “Impacts to Geology and Soils” section (not “impacts on human health and safety”).*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 538:**

*(Section 5.3.1.2.8.5, Page 5-77)*

*Last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 539:**

*(Section 5.3.1.2.8.6, Page 5-78)*

*Important Structures and Mineral Resources. Remember that this section (5.3.1) is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, remove the part of this sub-section that discusses “Important Structures.”*

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 540:**

*(Section 5.3.1.2.8.6, Page 5-78)*

*Last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 541:**

*(Section 5.3.1.2.8.7, Page 5-78)*

*“Borrow materials for the Warner Valley Reservoir embankment dam would be supplied from local gravel pits and other material sources in the St. George metropolitan area.” Where are these locations? They need to be identified NOW.*

**UDWRe Response:**

**Refer to the responses to BLM Comments 474 and 523.**

**BLM Comment 542:**

*(Section 5.3.1.2.8.7, Page 5-78)*

*Last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 543:**

*(Section 5.3.1.2.9.1, Page 5-78)*

*Last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 544:**

*(Section 5.3.1.2.9.2, Page 5-78)*

*First paragraph, last Sentence: Change “effects and no” to “or.”*

*Second paragraph, last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 545:**

*(Section 5.3.1.2.9.9, Page 5-78)*

*Last Sentence: Change “effects and no” to “or.”*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 546:**

*(Section 5.3.1.2.9.4, Page 5-79)*

*“The No Lake Powell Water Alternative would have long-term adverse effects on soil resources in the St. George metropolitan area. Soils supporting a wide range of irrigated landscapes would not be irrigated with potable water, and only those soils irrigated with secondary water supplies would continue to receive water. Soils previously irrigated with potable water would transition to desert plant species and vegetation supported only by precipitation. These soils would be susceptible to erosion from wind and precipitation events because they would no longer be stabilized by irrigated vegetation. This adverse effect would be significant within the affected residential developments in the St. George metropolitan area.” Please provide data and research to support this conclusion.*

**UDWRe Response:**

**Refer to response to BLM Comment 547 below. The first part, non-irrigated land transitioning to desert plant species and vegetation only supported by precipitation, is self-evident. For research in southern Utah related to erosion of soil without protecting crust and vegetation, see Belnap, J. 2013. Cryptobiotic Soils: Holding the Place in Place. <http://geochange.er.usgs.gov/sw/impacts/biology/crypto/>.**

**BLM Comment 547:**

*(Section 5.3.1.2.9.4, Page 5-79)*

***First paragraph, last Sentence:*** Change “effects and no” to “or.”

***Second paragraph:*** This paragraph states there would be adverse effects from soils not being irrigated. This is totally untrue. Irrigation is not a benefit to soils and geology. In fact, irrigation makes soils much more saline in this environment. Soils previously irrigated with potable water would transition to desert plant species and vegetation supported only by precipitation. Thus, allowing soils to return to a natural condition would be a benefit. They would develop biological soil crusts, which would prevent erosion.

*If this paragraph is kept in at all, it should be rewritten to read: “The No Lake Powell Water Alternative would have long-term beneficial effects on soil resources in the St. George metropolitan area. Only those areas irrigated with secondary water supplies would continue to be irrigated. Soils previously irrigated would transition to endemic plant species, which are adapted to the local climatic conditions. These soils over time would develop biological soil crusts, which would make them resistant to wind erosion. In addition, salt accumulation at the soil surface may be minimized with the elimination of irrigation – salts may build up in the soil when poor soil drainage (due to compacted and/or clayey soils) prevents irrigation water from leaching the salt down through the soil profile. Deep percolation of water down through the soil profile moves salt out of the rooting zone, and surface evaporation concentrates the salts at the soil surface. This would result in long-term benefits to soils in the area.”*

**UDWRe Response:**

**UDWRe’s view is that the last sentence of the first paragraph is appropriate as written.**

**The BLM reviewer is reminded that the evaluation of impacts is not based on original, pristine natural conditions, but on existing conditions that serve as a baseline for impacts. Removal of irrigation would change those conditions and the impact would be significant. The existing vegetation would change and diminish without being replaced by**

comparable ground cover, and the potential for erosion by wind and rain would increase until natural conditions could be re-established. The development of cryptobiotic soils is a process that, in southern Utah, can be expected to take decades or even centuries, and erosion can remove soils prior to establishment of soil crusts (Belnap, J. 2013. **Cryptobiotic Soils: Holding the Place in Place.** <http://geochange.er.usgs.gov/sw/impacts/biology/crypto/>). UDWRe's view is that that no change to the statement is needed.

**BLM Comment 548:**

*(Section 5.3.1.2.9.4, Page 5-79)*

*The second paragraph in this section which says that the no LPP alternative would cause significant soil erosion through the reduction in irrigated lands does not make sense. What about the soil erosion and dust that may result from plowing fields prior to planting and irrigation? Please explain how some irrigated fields reverting to natural desert vegetation would cause a significant increase in soil erosion. This paragraph appears to be biased against the No LPP water alternative in contrast with the pro-build alternatives*

**UDWRe Response:**

**Refer to the response to Comment 547. Be advised that the No Lake Powell Water Alternative is not a no-build alternative, there is nothing in the alternative that prohibits other forms of development.**

**BLM Comment 549:**

*(Section 5.3.1.2.9.5, Page 5-79)*

***Geologic Hazards on Human Health and Safety.*** Remember, this is the “Impacts to Geology and Soils” section (not “impacts on human health and safety”).

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 550:**

*(Section 5.3.1.2.9.5, Page 5-79)*

***Last Sentence:*** Change “effects and no” to “or.”

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 551:**

*(Section 5.3.1.2.9.6, Page 5-79)*

***Important Structures and Mineral Resources.*** Remember that this section (5.3.1) is impacts of the project on geology and soils not the impacts to the project FROM GEOLOGY/SOILS or impacts from the project on other resources. Thus, delete “Important Structures” from the sub-section heading.

Change “effects and no” to “or.”

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472. UDWRe’s view is that the text regarding measureable and significant effects is appropriate as written.**

**BLM Comment 552:**

*(Section 5.3.1.2.10, Page 5-79)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The No Action Alternative was not analyzed under the Geology and Soils Resources section because there would be no impacts (status quo). A subsection has been added for the No Action Alternative, indicating that there would be no impacts.**

**BLM Comment 553:**

*(Section 5.3.1.3, Page 5-79)*

**Protection, Mitigation and Enhancement Measures.** *These are part of the Proposed Action, so should be analyzed as part of the alternative effects discussion, rather than be analyzed on their own—i.e., do they mitigate adverse effects of the alternatives?*

**UDWRe Response:**

**The Protection, Mitigation and Enhancement Measures are provided in the study reports and environmental documents as part of the license application in a separate section following the environmental analysis to meet FERC’s requirements per 18 CFR 5.18 (b)(5)(ii)(C). They are considered additional measures to reduce the intensity of impacts on resources, in some cases to levels below identified significance criteria thresholds. If protection, mitigation and enhancement measures cannot further reduce impacts, then the residual or remaining impacts are documented as unavoidable impacts.**

**BLM Comment 554:**

*(Section 5.3.1.3.1, Page 5-79)*

**Last sentence.** *Add the “geology and soils” after “no adverse effects on”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 555:**

*(Section 5.3.1.3.2, Page 5-79)*

**Last sentence.** *Add the “geology and soils” after “no adverse effects on”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 556:**

*(Section 5.3.1.3.3, Page 5-79)*

*Second sentence.* Explain what “unsuitable soils” means.

*Last sentence.* Add the “geology and soils” after “no adverse effects on”.

**UDWRe Response:**

**The text has been revised to change “unsuitable soils” to “soils susceptible to erosion”. The suggested edit from the second line from the above comment has been incorporated.**

**BLM Comment 557:**

*(Section 5.3.1.3.4, Page 5-80)*

*Last sentence.* Add the “geology and soils” after “no adverse effects on”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 558:**

*(Section 5.3.1.3.5, Page 5-80)*

*Last sentence.* “...covered with topsoil as available, and planted with seeds from endemic plant species to stabilize the surface particles and avoid erosion.” Change to “...covered with topsoil as available, and revegetated with an appropriate seed mixture to stabilize the surface particles and avoid erosion”

**UDWRe Response:**

**The sentence has been revised to say “...covered with topsoil as available, and revegetated with an endemic plant seed mixture to stabilize surface particles and avoid erosion.”**

**BLM Comment 559:**

*(Section 5.3.1.3.6, Page 5-80)*

*Last sentence.* “Blasting would be performed as unobtrusively as possible and managed to avoid damage to nearby structures, facilities and properties.” Remember that this is the “Impacts to Geology and Soils,” not impacts to other resources.

**UDWRe Response:**

**Refer to the responses to BLM Comments 470 and 472.**

**BLM Comment 560:**

*(Section 5.3.1.4.1, Page 5-81)*



*How does groundwater drawdown affect soils and geology? This seems to be a water impacts discussion.*

**UDWRe Response:**

**The text has been revised to remove the discussion of groundwater drawdown.**

**BLM Comment 561:**

*(Section 5.3.1.4.4, Page 5-81)*

*Second sentence. Add the word “beneficial” in between “significant” and “effects” in the sentence.*

**UDWRe Response:**

**Refer to the response to BLM Comment 547.**

**BLM Comment 562:**

*(Section 5.3.1.4.4, Page 5-81)*

*Second sentence. “The No Lake Powell Water Alternative would have significant effects on soil resources in the St. George metropolitan area; however, none of the interrelated actions would combine with these effects to cause cumulative effects on soil resources.” This is not an adequate cumulative impacts analysis.*

**UDWRe Response:**

**The cumulative impacts analysis has been modified in the text to include more discussion of cumulative impacts analysis for the No Lake Powell Water Alternative. Interrelated actions include the continued construction and operation of the Southern Corridor Highway, the development of the Jackson Flat Reservoir, and the construction of the Kern River – Hurricane Natural Gas Pipeline.**

**The Southern Corridor Highway is a four-lane highway, part of which has already been constructed from I-15 south of St. George to the St. George Municipal Airport, and part of which will be constructed from the airport to State Route 9 near Hurricane. Construction of the highway has, and will, eliminate the soil resources within the footprint of the roadway. Ongoing operation of the highway will permanently remove access to soil resources within the footprint of the roadway. This would be a cumulative impact for both construction and operation.**

**Jackson Flat Reservoir is under construction near Kanab. It will permanently occupy land and will remove the availability of soil resources underlying the reservoir and dam. This would be a cumulative impact for both construction and operation.**

**The Kern River – Hurricane Natural Gas Pipeline will be constructed along one of two routes. In either case, soil resources will be temporarily removed during construction of the buried pipeline. This would be a cumulative impact during construction. Once constructed, soil will be replaced and the alignment revegetated, so no cumulative impacts would occur during operation.**

**BLM Comment 563:**

*(Section 5.3.1.5, Page 5-81)*

**Unavoidable Adverse Effects. First paragraph.** *How does groundwater drawdown affect soils and geology? This seems to be a water impacts discussion.*

**UDWRe Response:**

**The discussion of groundwater drawdown has been removed from the text.**

**BLM Comment 564:**

*(Section 5.3.1.5, Page 5-82)*

**Last paragraph.** *“The No Lake Powell Water Alternative would have long-term unavoidable adverse effects on soil resources in the St. George metropolitan area. Soils would no longer be irrigated with potable water and would transition to either unvegetated conditions or support only desert vegetation, and the soil resources would be susceptible to erosion from wind and precipitation events.” Change the above sentence to “The No Lake Powell Water Alternative would have no unavoidable adverse effects on soil resources.”*

*This paragraph states there would be adverse effects from soils not being irrigated. This is totally untrue. Irrigation is not a benefit to soils and geology. In fact, irrigation makes soils much more saline in this environment. Soils previously irrigated with potable water would transition to desert plant species and vegetation supported only by precipitation. Thus, allowing soils to return to a natural condition would be a benefit. They would also develop biological soil crusts, which would prevent erosion, and accumulation of salts at the soil surface would be minimized from lack of artificial watering.*

**UDWRe Response:**

**Refer to the response to BLM Comment 547.**

**BLM Comment 565:**

*(Section 5.3.2)*

**General Comments:** *Use of acronyms - many of the acronyms used in this section have previously been defined, so don't need to redefine them here.*

**UDWRe Response:**

**Acronyms that have previously been defined will not be redefined in this section of the text.**

**BLM Comment 566:**

*(Section 5.3.2.1.3, Page 5-87)*

**1st line of 2nd paragraph:** *cite the actual document name here, vs. citing WCWCD 2014. The proper format would be to cite the document then have “WCWCD 2014” in parenthesis after that (and this also needs to be added to the citation list in Section 5.3.3.6).*

**UDWRe Response:**

**The citation format has been corrected and the reference has been added to the references section.**

**BLM Comment 567:**

*(Section 5.3.2.1.4, Page 5-88)*

*Merge this section with Sec. 5.1.4 (which essentially has the same information), then just reference that section here ... no need to repeat all of this information when it already exists in a previous section of this document.*

**UDWRe Response:**

**Section 5.3.1.1 of the PLP addresses the Affected Environment, where conditions and analysis are summarized, and Section 5.3.1.2 addresses Environmental Effects, including significance criteria and whether or not conditions meet those criteria. Section 5.3.1.2 does not present analytical methods. UDWRe's view is that no revision to the text is needed.**

**BLM Comment 568:**

*(Section 5.3.2.1.4.1, Page 5-88)*

*1st line – Page 5-11 of this PLP lists the capacity of Kolob Reservoir as 6,914 ac-ft, which is in conflict with this number. Which is it?*

*2nd line - Page 5-11 states that Kolob Reservoir was completed in 1956 (whereas this states 1957) ... which is it? (Need to have consistent info.)*

**UDWRe Response:**

**Kolob Reservoir has a capacity of 5,586 acre feet and was built in 1956. The text has been revised to reflect this.**

**BLM Comment 569:**

*(Section 5.3.2.1.5, Page 5-89)*

*Merge this section with Sec. 5.1.4 (which essentially has the same information), then just reference that section here ... no need to repeat all of this information when it already exists in a previous section of this document.*

**UDWRe Response:**

**The document has been organized and written in accordance with FERC guidance.**

**BLM Comment 570:**

*(Section 5.3.2.1.5, Page 5-90)*

*3rd line - please capitalize "Plateau."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 571:**

*(Section 5.3.2.1.8, Page 5-90)*

*It is not “the Grand Staircase-Escalante National Monument” ... please delete “the”. (It is not correct to use “the” when using a proper name.)*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 572:**

*(Section 5.3.2.1.8, Pages 5-90 to 5-91)*

*“Because of its proximity to Zion National Park and the Grand Staircase – Escalante National Monument, Kane County is a partner in an agreement with WCWCD and others that limits its well production and groundwater development by prohibiting removal of water supplies from the Monument.”*

*Please check the accuracy of this statement. GSENM recently authorized a well for KCWCD inside its boundary in Johnson Canyon on the west side of Johnson Canyon Road.*

**UDWRe Response:**

**The statement has been removed from the document and the applicable study report.**

**BLM Comment 573:**

*(Section 5.3.2.1.8, Page 5-91)*

*1st line of 2nd full paragraph on page: Insert “Creek” after “Kanab.”*

*2nd line of 3rd full paragraph on page: This states that existing supply yields are expected to decline from 3% to 7.2% ... isn’t that an increase rather than a decline?*

**UDWRe Response:**

**The suggested edit from the first paragraph from the above comment has been incorporated. The range of decline is expected to be between 3% and 7.2%.**

**BLM Comment 574:**

*(Section 5.3.2.1.8, Page 5-91)*

*4th line of 3rd full paragraph on page: States: “...groundwater quality in wells drilled in the Johnson Wash area is of poor quality...”. This is misleading. Water from wells in the lower portion of the basin, below the Lamb’s Point Tongue Aquifer, is of poor quality, but in the upper basin, above the Lamb’s Point Tongue, the groundwater is good quality. In fact, KCWCD supplies a large portion of its customers with water from wells in the upper Johnson Wash drainage basin. “Johnson Wash” and “Johnson Canyon” seem to be used interchangeably.*

**UDWRe Response:**

**Section 5.3.2.1.8 clearly states that groundwater from wells in the upper basin is of good quality and that groundwater from wells in the lower basin is of poor quality. UDWRe's view is that no revision to the text is needed.**

**BLM Comment 575:**

*(Section 5.3.2.2, Page 5-93)*

*There needs to be an analysis on the cost of the project and how that will affect the residents of Washington County who will be paying for the project.*

**UDWRe Response:**

**Refer to response to comments BLM Comment 572 above.**

**BLM Comment 576:**

*(Section 5.3.2.2.1, Page 5-93)*

*6th line of 1st full paragraph on page: Please define the "gpcd" acronym (This is the first place in the PLP that this is used).*

*1st and 2nd lines of 2nd full paragraph on page: What is this projected population increase for Kanab and Johnson Canyon area based upon? Please provide documentation.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 577:**

*(Section 5.3.2.2.1, Page 5-93)*

*Keeps referring to Washington County population at 138k in 2010. Need to update that.*

**UDWRe Response:**

**The 2010 figure is based on the U. S. census. UDWRe's view is that the text is appropriate as written.**

**BLM Comment 578:**

*(Section 5.3.2.2.1, Page 5-93)*

*Keeps referring to Kane County population using 2010 figures. Need to update that.*

**UDWRe Response:**

**The 2010 figure is based on the U. S. census. UDWRe's view is that the text is appropriate as written.**

**BLM Comment 579:**

(Section 5.3.2.2.2, Page 5-93)

*Last year the Utah Legislative Auditor questioned the accuracy or reliability of these WCWCD projected water supply deficits, and indicated that the WCWCD may have underestimated the potential for more effective water conservation combined with overestimating the projected demand for water. How does this language reconcile the Utah Legislative Auditor's findings?*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans. The stated interpretation of audit content is not supported by the audit itself.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously. The LPP study team has studied this project in-depth, researching extensively beyond the basic planning found in the state water plan.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**BLM Comment 580:**

(Section 5.3.2.2.4, Page 5-94)

*The no LPP alternative water supply language may have to look at what other Southwest cities have already done, making substantial progress with water conservation without resorting to such extreme measures. Instead of spending billions on a pipeline, there should be more comprehensive water conservation measures and tiered water pricing to lessen demand.*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority. The area's hot, arid climate coupled with high tourism and a high number of second homes drives the per capita use of water up but additional conservation is achievable.**

**Districts Response:**

**Refer to response to comments BLM Comment 579 above.**

**BLM Comment 581:**

*(Section 5.3.2.2.4 and 5.3.2.2.5, Page 5-94)*

***NEW SUB-SECTIONS:** There need to be sub-sections added for the “Existing Highway Alternative” and “Southeast Corner Alternative” (which are currently missing). Also need an analysis (i.e., new sub-section) for the No Action Alternative.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 582:**

*(Section 5.3.2.3, Page 5-94)*

*Which alternative(s) does this protection measure apply to? All of the pipeline alignment alternatives, or only some of them. Please clarify.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 583:**

*(Section 5.3.2.4, Page 5-95)*

*Last sentence states that the No Lake Powell Water Alternative would have a separate set of cumulative effects ... what about the No Action Alternative? Need to address that alternative in this analysis also.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 584:**

*(Section 5.3.2.4.1, Page 5-95)*

***Last sentence of 1st paragraph:** Delete “positive effects.” Need to present an unbiased analysis, so only state that “cumulative effects on water supply would be long-term.”*

***Last sentence of 2nd paragraph:** Delete “adverse effects.” Need to present an unbiased analysis, so only state that “cumulative effects on M&I water supply could be long-term.”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 585:**

*(Section 5.3.2.4.1, Page 5-95)*

*The second full paragraph on this page contains erroneous information and totally unwarranted conclusory findings related to the BLM Resource Management Plans and the “cumulative”*



*effects of those plans on M&I water supplies. Firstly, contrary to what is stated here, BLM has not yet released Proposed Resource Management Plans or a Proposed RMP Amendment; therefore, no decisions have been made with regard to water resources and no “future management activities” can possibly be accurately evaluated in this EA, based only on the range of alternatives provided in the Draft RMPs/DEIS. The conclusions stated here, e.g., that water would be removed from the Virgin River or that the “cumulative effects on M&I water supply could be long-term, adverse effects” are totally speculative and unfounded.*

**UDWRe Response:**

**The potential cumulative effects of reasonably foreseeable future plans and actions have been included in the analysis, even though decisions have not been made. UDWRe understands that the decisions made on proposed RMP amendments and proposed RMPs may or may not result in actions affecting water supplies and their use.**

**BLM Comment 586:**

*(Section 5.3.2.4.2, Page 5-96)*

**3rd line on page:** Delete “adverse effects.” Need to present an unbiased analysis, so only state that “cumulative effects on M&I water supply would be long-term.”

**Last sentence of 1st full paragraph on page:** Delete “positive effects.” Need to present an unbiased analysis, so only state that “cumulative effects on water supply would be long-term.”

**Last sentence of 2nd full paragraph on page:** Delete “adverse effects.” Need to present an unbiased analysis, so only state that “cumulative effects on M&I water supply would be long-term.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 587:**

*(Section 5.3.3.1, Page 5-98)*

**2nd line:** The most recent flood in this area was in 2010, not 2005.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 588:**

*(Section 5.3.3.1.2.1, Page 5-100)*

**6th line of 1st paragraph:** It should be “Lees Ferry” (not “Lee” Ferry). And what’s the “I” after “Ferry”? Is that a typo? It is not “the Glen Canyon Dam”... please delete “the”. (It is not correct to use “the” when using a proper name.)

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 589:**

*(Section 5.3.3.1.2.1, Page 5-103)*

*2nd line of text: Isn't there any more recent flow data than 2008? If so, please update this.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 590:**

*(Figure 5-24, Page 5-104)*

*Should be "Percent of Flows Exceeded" (not "Percent of Flows Exceed").*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 591:**

*(Section 5.3.3.1.2.2, Page 5-109)*

*5th line of 1st paragraph: Should read "state line into Arizona."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 592:**

*(Section 5.3.3.1.2.2, Page 5-106)*

*4th line on page: Wouldn't this instream flow requirement also apply to threatened and candidate species as well?*

*Bullet list at bottom of page: Please write out the full state names (don't use abbreviations).*

**UDWRe Response:**

**There is no instream flow requirement for the Virgin River set by USFWS. The text has been revised to address the comment.**

**The text has been revised to write out the full state names.**

**BLM Comment 593:**

*(Section 5.3.3.1.2.2, Page 5-110)*

*Many places on page: Please write out the full state names (don't use abbreviations).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 594:**

*(Figure 5-34, Page 5-112)*

*Should be “Percent of Flows Exceeded” (not “Percent of Flows Exceed”).*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 595:**

*(Figure 5-36, Page 5-113)*

*Please define “APY.”*

*Is there any streamflow data more recent than 2005? If so, please update this table.*

**UDWRe Response:**

**The figure legend and right side y-axis scale read “AFY”; which is an abbreviation for acre-foot per year. “AFY” has been added to the list of abbreviations.**

**UDWRe’s view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 596:**

*(Section 5.3.3.1.2.2, Page 5-114)*

*Many places on page: Please write out the full state names (don’t use abbreviations).*

*Line 1 under “Virgin River Near St. George”: Replace “town” with “St. George.”*

*2nd to last line on page: Is there any exceedance flow data more recent than 2008? If so, please update this.*

**UDWRe Response:**

**The suggested edits from the first and second paragraph of the above comment have been incorporated.**

**UDWRe’s view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 597:**

*(Figure 5-39, Page 5-115)*

*Is there any streamflow data more recent than 2005? If so, please update this table.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 598:**

*(Figure 5-41, Page 5-116)*

*Should be "Percent of Flows Exceeded" (not "Percent of Flows Exceed").*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 599:**

*(Section 5.3.3.1.2.2 and Figure 5-42, Page 5-116)*

*2nd line of text: Is there any flow data more recent than 2006? If so, please update this table.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 600:**

*(Figure 5-43, Page 5-117)*

*Is there any streamflow data more recent than 2005? If so, please update this table.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 601:**

*(Figure 5-43, Page 5-118)*

*1st line on page: Please write out the full state name (don't use an abbreviation).*

*Is there any streamflow data more recent than 2003? If so, please update this figure.*

**UDWRe Response:**

**The suggested edit from the first paragraph from the above comment has been incorporated.**

**BLM Comment 602:**

*(Figure 5-47, Page 5-119)*

*Should be "Percent of Flows Exceeded" (not "Percent of Flows Exceed").*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 603:**

*(Figure 5-49, Page 5-120)*

*Is there any streamflow data more recent than 2005? If so, please update this figure.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 604:**

*(Section 5.3.3.1.2.2, Page 5-120)*

*3rd line from bottom of page: Middle of line should read "... the Virgin River at the southern end of St. George. ..."*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 605:**

*(Figure 5-51, Page 5-121)*

*Is there any streamflow data more recent than 2003? If so, please update this figure.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figures) would not materially affect the information presented.**

**BLM Comment 606:**

*(Figure 5-53, Page 5-122)*

*Should be "Percent of Flows Exceeded" (not "Percent of Flows Exceed").*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 607:**

*(Figure 5-55, Page 5-123)*

*Is there any streamflow data more recent than 2005? If so, please update this figure.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 608:**

*(Section 5.3.3.1.2.3, Page 5-124)*

**6th line of 1st paragraph:** *Shouldn't this be "ephemeral streams" rather than "intermittent streams"? Intermittent implies some perennial flow in certain segments. Crossings would be of washes that only flow in response to a seasonal precipitation event, making them ephemeral. Kanab Creek:*

**4th paragraph, 2nd line:** *There should be a hyphen between "Staircase" and "Escalante." Also, end of line should read "The Paria River is a tributary to the..."*

**4th paragraph, 3rd line:** *Add to end of paragraph "in Arizona."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 609:**

*(Figure 5-58, Page 5-126)*

*Is there any streamflow data more recent than 2003? If so, please update this figure.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 610:**

*(Figure 5-61, Page 5-127)*

*Should be "Percent of Flows Exceeded" (not "Percent of Flows Exceed").*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 611:**

*(Figure 5-62, Page 5-128)*

*Is there any streamflow data more recent than 2005? If so, please update this figure.*

**UDWRe Response:**

**UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.**

**BLM Comment 612:**

(Section 5.3.3.1.2.3 and Figure 5-64, Page 5-129)

**1st line on page:** Insert “in Utah” after “Highway 89.”

**2nd/4th lines on page and Figure 5-64:** The Paria River flows nowhere near Kanab, so delete “near Kanab” in these 3 locations.

**Figure 5-64:** Is there any streamflow data more recent than 2008? If so, please update this figure.

**UDWRe Response:**

The text has been revised to address the comment in the first line on the page.

The USGS streamflow gage in the area is named “Paria River near Kanab.” The text remains unchanged.

UDWRe’s view is that updating the flow data (and associated figure) would not materially affect the information presented.

**BLM Comment 613:**

(Figures 5-65, 5-66, and 5-67, Page 5-130 and 5-131)

The Paria River flows nowhere near Kanab, so delete “near Kanab” in these 3 figures.

**UDWRe Response:**

The USGS streamflow gage in the area is named “Paria River near Kanab.” The figures remain unchanged.

**BLM Comment 614:**

(Section 5.3.3.1.3, Page 5-131)

**3rd line of 1st paragraph:** The acronym “M&I” has already been defined, so don’t do so again here.

**Last line of 1st paragraph:** Is there any return flow data more recent than 2005? If so, please update this.

**4th line of 2nd paragraph:** Is there any return flow data more recent than 2008? If so, please update this. Also please be consistent in the use acronyms – on this line “MGD” is used, whereas on line 7 “mgd” is used.

**4th line of 2nd paragraph:** Was the St. George wastewater reuse plant ever completed? If so, update this text (depending on completion date, it likely isn’t considered “recent” any more).

**7th line of 2nd paragraph:** Please be consistent in the use of abbreviations – on this line “AF” is used, whereas elsewhere (such as on pages 5-136 and 5-146) “ac-ft” is used, which is BLM’s preference. So replace “AF” here with “ac-ft.”

**UDWRe Response:**



The suggested edits from the first and fifth paragraphs of the above comment have been incorporated.

The St. George wastewater reuse plant was completed in 2006. The text has been revised to address the comment.

**BLM Comment 615:**

*(Figure 5-68, Page 5-132)*

*Is there any streamflow data more recent than 2008? If so, please update this figure.*

**UDWRe Response:**

UDWRe's view is that updating the flow data (and associated figure) would not materially affect the information presented.

**BLM Comment 616:**

*(Section 5.3.3.1.3, Page 5-132)*

**Line 1 of text:** Please insert “, Utah” after “La Verkin.”

**Line 4 of text:** Please be consistent in the use of abbreviations – on this line “acre-feet” is used, whereas elsewhere (such as on pages 5-136 and 5-146) “ac-ft” is used, which is BLM’s preference. So replace “acre-feet” here with “ac-ft.”

**UDWRe Response:**

The suggested edits have been incorporated.

**BLM Comment 617:**

*(Section 5.3.3.1.3, Page 5-132)*

**Several places on page:** Please be consistent in how the use of abbreviations - on this line “acre-feet” is used, whereas elsewhere (such as on pages 5-136 and 5-146) “ac-ft” is used, which is BLM’s preference. So replace “acre-feet” here with “ac-ft.”

**1st line of 2nd paragraph:** Is there any more recent water use data than 2005? If so, please update this text.

**UDWRe Response:**

The suggested edit from the first paragraph from the above comment has been incorporated.

**BLM Comment 618:**

*(Section 5.3.3.1.4.1, Page 5-133)*

*1st 3 sentences of 1st paragraph: This information is already stated in Section 5.1.4, so no need to repeat it here (at most, reference that section here).*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 619:**

*(Figure 5-70, Page 5-135)*

*Is there any water storage data more recent than 2008? If so, please update this figure.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 620:**

*(Figure 5-71, Page 5-135)*

*Is there any historical stage data more recent than 2008? If so, please update this figure.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 621:**

*(Figure 5-72, Page 5-136)*

*Is there any water release data more recent than 2008? If so, please update this figure.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 622:**

*(Section 5.3.3.1.4.3, Page 5-137)*

*1st paragraph: Much of this information is already stated in Section 5.1.4, so no need to repeat it here (at most, reference that section here).*

*2nd line: Delete "the" before "Sand Hollow." (Don't use "the" when referencing a proper name.)*

**UDWRe Response:**

**The text has been revised to address the coment.**

**The suggested edit from the second paragraph from the above comment has been incorporated.**

**BLM Comment 623:**

*(Section 5.3.3.1.5, Page 5-139)*

*Also reference the 2010 flood here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 624:**

*(Section 5.3.3.1.6.1, Page 5-140)*

***1st line of 1st paragraph:** Delete “the” before “Glen Canyon Dam.” (Don’t use “the” when referencing a proper name.)*

***1st line of 3rd paragraph:** Insert “resources and” after “Several” (note that several of the items included in the bullet list are not “uses” but are “resources” (such as archaeological sites and spawning habitat).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 625:**

*(Section 5.3.3.1.6.2, Page 5-141)*

***10th line under “Virgin River Stability”:** Also reference the 2010 flood here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 626:**

*(Section 5.3.3.1.6.2, Page 5-142)*

***1st line on page:** Use a different word than “improved” (the river itself has not been improved) if trying to point out that a lot of work has been done to the channel and river banks to make them more resistant to flooding.*

**UDWRe Response:**

**The texts has been revised to address the comment.**

**BLM Comment 627:**

*(Section 5.3.3.2.1, Page 5-142)*

***3rd line of section:** This is an incorrect statement ... the environmental effects analysis in this section is supposed to be the effects of the Lake Powell Pipeline ON water quantity and flows, not that flow would have on other resources. Please correct this statement (as well as the significance criterion listed below, which is also incorrect).*

**UDWRe Response:**

**The approved study plan incorporated analyses requested by FERC, which included potential effects that return flows resulting from the LPP Project water could have on other resources.**

**BLM Comment 628:**

*(Section 5.3.3.2.2.1, Page 5-146)*

*Several places on page: Please be consistent in the use of abbreviations – on this line “acre-feet” is used, whereas elsewhere (such as on pages 5-136 and 5-146 and other places in the PLP) “ac-ft” is used, which is BLM’s preference. So replace “acre-feet” here with “ac-ft.”*

**UDWRe Response:**

**The text has been revised to address the coment.**

**BLM Comment 629:**

*(Section 5.3.3.2.2.2, Page 5-148)*

*6th line of 1st paragraph: Need to explain why the “50th percentile” was selected as most representative.*

**UDWRe Response:**

**UDWRe’s view is that the reason why the 50<sup>th</sup> percentile was selected is self-explanatory. Nonetheless, text has been added to address the comment.**

**BLM Comment 630:**

*(Section 5.3.3.2.2.2, Page 5-149)*

*5th line of text: Please write out the full state names (don’t use abbreviations).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 631:**

*(Section 5.3.3.2.2.2, Page 5-152)*

*3rd and 4th lines on page: Doesn’t WCWCD HAVE to leave some flows in the river due to listed fish species (vs. what is stated here, that WCWCD may CHOOSE to leave some flow)?*

**UDWRe Response:**

**Rights of way for the Quail Creek project were issued by BLM pursuant to an environmental assessment dated August 15, 1983. The EA analysis was based upon studies performed by Hardy and Deacon in 1982, which formed the basis for the December, 1982 biological opinion for the Quail Creek project. The 1982 BO and subsequent BOs have**

been based upon a recognition of the Virgin River flow regime created by long-standing water rights that hold an 1890 priority.

The 1982 BO stated:

It is our opinion that the operation of the PQCRP [Proposed Quail Creek Reservoir Project] will not significantly alter the temperature regime or any other water quality characteristics in the Virgin River. As a result of this and the above discussion on flow depletions, it is our opinion that the PQCRP (based upon the operational plan provided by the applicant) will not have any significant negative impact on the woundfin or its habitat. Therefore, the PQCRP is not likely to jeopardize the continued.

In 1994 litigation was filed by Southern Utah Wilderness Alliance against BLM and USFWS pertaining to operations of the project. In 1992 BLM reinitiated consultation on operations of the project. The BLM consultation analysis relied upon further studies performed by Hardy and Addley in 1993 and 1994 updating effects of project operations on listed and conservation fish species. In 1997, settlement of the litigation called for creation of the Virgin River Resources Recovery and Management Program (VRP), a partnership of the USFWS, State of Utah Division of Wildlife Resources and the Washington County Water Conservancy District. The VRP was finalized in 2002, although the various partners had a long history of funding recovery actions prior to the formalization of the program. The baseline for the VRP included the flow simulations that formed the basis for the original 1982 biological opinion. In all cases, the objective studies showed that the District maintains a minimum of 86 cfs or natural flow at the Washington Fields Diversion in accordance with its commitments, taking into account obligations to deliver priority water rights, along with 3 cfs released for Spinedace at the Quail Creek Diversion.

Biological opinions issued in 2001 (Virgin River Program), 2004 (Washington Fields Fish Screen), 2006 (Quail Creek Diversion Sluicing Program), 2012 (Washington Fields Road Bridge Repair), 2013 (Stateline Fish Barrier and UDOT I-15 Bridge) and 2014 (Mall Drive Bridge) have all recognized that flows in the Virgin River below the QCD are based upon the “Washington Fields water right [that] requires a minimum flow of 86 cfs (or the natural flow of the river) to the Washington Fields Diversion.”

These opinions have taken into account the fundamental requirements of Utah state water rights which have affected the flows in the Virgin River since before the turn of the 20<sup>th</sup> century as set forth below.

The flow of the Virgin River is affected by diversions throughout the basin. Above the current Quail Creek Diversion (QCD), the complex interactions of small diversions and return flows result in a slight decrease in overall natural flows in the river. In the late 1800s two larger diversions dry-dammed the river at approximately the location of the QCD.

The original Hurricane diversion, located about one-fourth mile below the present QCD, was completed in 1904, with a year-round diversion right of 33 cubic feet per second (cfs). An additional 63 cfs of lower priority water rights was perfected in the 1940's. When water was available, this diversion could take up to 96 cfs.

The original La Verkin diversion, located about three-fourths of a mile below the present QCD, was completed in 1891, with a year-round diversion right of 12 cfs. During the irrigation season, this diversion dry dammed the river except during floods, leaving no water in the river channel until La Verkin Springs (also known as Dixie Hot Springs or Pah Tempe).

An additional, non-consumptive water right was created with the construction of a Southern Utah Power Company power plant in the 1920's. The water was delivered through a pipeline from the La Verkin canal to the power plant, located about  $\frac{3}{4}$  mile below the bridge between Hurricane and LaVerkin. As much as 50 cfs was diverted for power generation, although the non-consumptive water right was for 100 cfs.

Virgin River discharge below these diversions, derived from irrigation return flows, the La Verkin Springs, Ash Creek, La Verkin Creek, and other tributaries and springs along the river, were captured at the Washington Fields Diversion, operated by the St. George and Washington Canal Company with a year-long water right of 86 cfs. This water right shares an 1890 priority with the La Verkin and Hurricane irrigation water rights.

As a practical matter, natural flow was considered to be the water remaining in the river after satisfying the Hurricane and La Verkin water rights, along with discharge from La Verkin hot springs and other springs, the Southern Utah Power Company hydropower plant, tributaries and return flow from irrigation. Occasionally, it was necessary to curtail junior water rights at diversions other than these three major agricultural users.

The Washington County Water Conservancy District's Quail Creek project, including a diversion structure, pipeline, reservoir and hydropower plants, replaced the La Verkin and Hurricane Canal diversions in 1985 delivering the companies' water rights through the District system. As a result, the old diversions were abandoned.

The District must honor the 131 cfs of high priority water rights of Hurricane, La Verkin and St. George and Washington Canal Companies. The water rights acquired for the Quail Creek project have priority dates after 1921, much later than the pioneer era irrigation rights, and are thus considered "high water" rights available only if pre-existing rights have been satisfied, including specifically the 131 cfs of pre-1900 water rights noted above. The project was designed to divert water to District facilities during the winter and spring when flows exceed the level needed to meet the higher priority rights of the three irrigation companies. When flows drop to the point where all water is needed to meet the priority water rights, generally beginning by June of each year, no excess water is available and no diversions are made for District storage. On average, discharge does not exceed this number except during the winter and spring months, when the District is able to divert water for storage in the Quail Creek system.

The Quail Creek pipeline is designed to divert up to 250 cfs but generally takes less water due to operational factors. Any water in excess of available capacity may bypass the diversion and flow down river. In addition, if water quality is compromised by silt and debris, characteristic of summer floods, the water may bypass the diversion and flow downstream. This water may be rejected both because the debris creates hazards to the diversion structure and because the silty water is unsuitable for irrigation or reservoir storage. The flow duration statistics discussed above show that there is simply not base flow in the river that exceeds higher priority water rights, except during floods when water generally cannot be delivered to the Quail Creek pipeline. Current operations

**maintain a minimum bypass flow of 3 cfs at the QCD pursuant to the Spinedace Conservation Agreement.**

**When the district is not storing water, after diverted water is distributed to the Hurricane and LaVerkin canal companies the remainder then flows through the Hurricane Hydropower Plant, located just upstream from the Hurricane-La Verkin bridge, before returning to the river. The Hurricane Power Plant is designed for a flow of 30-40 cfs and is operated year long. This water use represents a portion of the old Southern Utah Power Company non-consumptive water right.**

**The Quail Creek Project continues to honor the legal rights represented by the pre-1900 131 cfs water rights of the three canal companies, in particular avoiding diversions that would reduce flows below the 86 cfs water right or natural flow, whichever is less, measured at the Washington Fields Diversion.**

**Beginning in 2010, the Virgin River Program and the WCWCD began work on a pumpback system to augment river flow in the reach below the Hurricane Hydropower Plant in order to mitigate high water temperature conditions in the upper river during warm summer months. The system was completed in 2012 and is now available to augment river flows up to 28 cfs in the reach of river extending from the La Verkin hot springs to the Washington Fields Diversion. The system delivers stored water from Sand Hollow Reservoir to Hurricane irrigators, thus off-setting the irrigation demand from the river.**

**The entire flow of the river has been diverted near the present site of the Washington Fields Diversion regularly and for long periods since the late 1890s through authorized water rights.**

**In 2004, USFWS issued a biological opinion for the construction of a fish screen on the St. George and Washington Canal Company diversion structure, commonly referred to as the Washington Fields Diversion. (Refer to the biological opinion attached to the end of this response.)**

**The biological opinion stated:**

**The amount of water diverted at WFD often represents the majority of the Virgin River flow, and at times the entire flow, resulting in a de-watered channel immediately downstream. Exceptions to this de-watered condition occur during spring period and during times when Virgin River flows exceed 172 cfs (i.e., twice the allocated 86 cfs). As recognized in the USFWS's 1982 Quail Lake opinion, delivery of flows to meet the water rights at WFD created a stretch upstream of the diversion structure that provided good habitat for the endangered Virgin River Fishes. [P. 15]**

**Further:**

**The proposed action also will require some level of re-operation of the District water control facilities upstream of the WFD to provide fish return flows at the fish screen facilities year round. This re-operation is interrelated with the proposed action. We anticipate that provisions of year-round fish return flows will require increased winter storage of Virgin River flows, from water rights belonging to the District, through agreements to be negotiated with the District.... The District will ensure that a minimum flow of 5 cfs (Program studies identified in Conservation Measure No. 2 will likely call for periods of flow greater than 20 cfs) is maintained in the river**



during the 5-year period commencing with operation of the fish screen.... Beyond the 5-year study period, the District, in coordination with the Program, will implement the Program's Flow Management Plan for the Virgin River immediately downstream of the WFD, pursuant to appropriate legal agreements. [PP. 3, 5]

No agreement has been executed to implement the Program's flow management plan. The only legal commitments in connection with flows at the Washington Fields Diversion are contained in the 2004 agreement between USFWS, WCWCD, UDWR and the canal company pursuant to which the Program is obligated to provide water to operate the fish screens and the canal company would provide water from an adjacent well to wash the fish screens.

There is no obligation to leave flow in the Virgin River below the Washington Fields Diversion. The "Intra-Service Biological Opinion on Washington Fields Diversion Canal, Washington County, Utah" dated August, 25, 2004, recognized that contracts would be required to provide for flows bypassing this diversion after studies were completed. To date, while the studies have been completed, no contracts have been negotiated. Therefore, any flows below this diversion, insofar as they are supplied by WCWCD, are a matter of choice.

**BLM Comment 632:**

*(Section 5.3.3.2.2.3, Page 5-158)*

**2nd and 4th lines of 1st paragraph:** Line 2 states that KCWCD would receive up to 4,000 ac-ft/year, then Line 4 states they would receive 1,338 ac-ft/year ... why the difference? Where would the other 2,662 ac-ft go? Please clarify/explain in text. Also, please be consistent in the use of abbreviations - on this line "acre-feet" is used, whereas elsewhere (such as on pages 5-136 and 5-146 and other places in the PLP) "ac-ft" is used, which is BLM's preference. So replace "acre-feet" here with "ac-ft."

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 633:**

*(Section 5.3.3.2.2.3, Page 5-159)*

**Last line before Figure 5-93:** How would bank and bed material erosion be mitigated? Is this what's listed in Section 5.3.3.1? If so, reference that here.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 634:**

*(Section 5.3.3.2.3.1, Page 5-159)*

**3rd and 4th lines:** Both of these acronyms (DNF and CC) have already been defined, so don't redefine them here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 635:**

*(Section 5.3.3.2.3.1, Page 5-160)*

*7th and 8th lines on page: Both of these acronyms (FONSI and ROD) have already been defined, so don't redefine them here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 636:**

*(Section 5.3.3.3.1, Page 5-164)*

*Details about stream crossing should be in proposed action. These "protections and mitigation measures" are design features and effect a number of resources other than the one being discussed in this section. For example, running riprap across an entire stream both up and downstream of the pipeline could have visual, hydrologic and wildlife effects.*

**UDWRe Response:**

**Details about stream crossing design features and protection and mitigation measures would be developed and determined during the design phase of the project.**

**BLM Comment 637:**

*(Section 5.3.3.4.1, Page 5-165)*

*13th and 17th lines of section: LTEMP acronym has already been defined, so don't redefine it here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 638:**

*(Section 5.3.4.1.1, Page 5-169)*

*Sub-section title is "Utah", but many of the surface water features listed in the bullet list are in Arizona. Why are they then listed and discussed in the Utah section? Please correct this.*

**UDWRe Response:**

**The text has been revised to address the comment**

**BLM Comment 639:**

*(Section 5.3.4.1.2, Page 5-171)*

*Several acronyms listed here (EPA, TDS, and TSS) have already been defined, so don't redefine them here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 640:**

*(Section 5.3.4.1.2.1, Page 5-171)*

**3rd line of section:** *Insert "In Arizona," before "It flows through ...".*

**4th line of section:** *End of line should read "... of Paiute Indians onto BLM-administered land, and through the Kanab Creek Wilderness (on National Forest System land) before its".*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 641:**

*(Table 5-28, Page 5-171)*

*Sampling periods listed are all relatively old now (2003, 2006, 2008) ... is there any data more recent? If so, update this table.*

**UDWRe Response:**

**A search yielded no updated data.**

**BLM Comment 642:**

*(Section 5.3.4.1.2.2, Page 5-172)*

**1st paragraph:** *Beginning of 3rd line should read "south through GSENM (in Kane County, Utah) into Arizona..." Then delete last sentence in paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 643:**

*(Table 5-33, Page 5-176)*

*Sampling periods listed only go up to 2004 or 2008 ... is there any data more recent? If so, update this table.*

**UDWRe Response:**

**A search yielded no updated data.**

**BLM Comment 644:**

(Section 5.3.4.1.2.3, Page 5-182)

**Lines 2, 3, 10, 11:** *The information on elevation (lines 2, 3) is incorrect. If listing the lowest elevation the river reaches, it is not at the Utah/Arizona state line, but would be where it empties into the Overton Arm of Lake Mead (as referenced in lines 10, 11).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 645:**

(Section 5.3.4.1.4, Page 5-198)

**1st line of section:** *Delete the duplicative “Water quality data for the relevant” text.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 646:**

(Section 5.3.4.1.4.1, Page 5-199)

*1st sentence of section is an incomplete sentence ... please revise.*

**2nd/3rd lines of 1st paragraph:** *Beginning of sentence should read “... flows through the Kaibab-Paiute Indian Reservation onto BLM-administered land, and through the Kanab Creek Wilderness (on National Forest System land) before its confluence with ...”.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 647:**

(Section 5.3.4.1.4.2, Page 5-199)

**3rd line of 1st paragraph:** *Beginning of line should read “south through GSENM (in Kane County, Utah) into Arizona ...” End of line should read “In Arizona, the Paria River flows through ...”, then delete “Arizona” on 4th line.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 648:**

(Section 5.3.4.1.5, Page 5-207)

*This is almost identical text with what is in Sec. 5.3.3.1.4.1 (and similar to that in Section 5.1.4), so no need to repeat it here (at most, reference Section 5.3.3.1.4.1 here).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 649:**

*(Section 5.3.4.1.5, Page 5-207)*

***1st paragraph:** Much of this information is already stated in Section 5.1.4, so no need to repeat it here (at most, reference that section here).*

***2nd line of 2nd paragraph:** USGS acronym has already been defined, so don't redefine it here.*

**UDWRe Response:**

**The suggested edit from the second paragraph from the above comment has been incorporated.**

**BLM Comment 650:**

*(Section 5.3.4.2.1, Page 5-210)*

***2nd and 3rd lines after bullet list:** UAC and AAC acronyms have already been defined, so don't redefine them here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 651:**

*(Section 5.3.4.2.2, Page 5-210)*

***6th line:** Insert "southeast corner of the" before "Kaibab-Paiute Indian Reservation."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 652:**

*(Section 5.3.4.2.2, Page 5-211)*

**Clearing and Grading**

- ***7th line:** Also need to discuss that increased sediment recruitment would result in increased salinity into the Colorado River (reference the Colorado River Basin Salinity Control Program).*

**Open-Cut Crossings**

- ***2nd paragraph:** Also need to discuss that increased sedimentation would result in increased salinity into the Colorado River (reference the Colorado River Basin Salinity Control Program).*

**Trenchless Construction Techniques**

- ***3rd line:** UAC acronym has already been defined, so don't redefine it here.*

**UDWRe Response:**

All mitigation measures will be identified and implemented. BMPs employed during construction and operation will prevent sediment recruitment and resultant increases in salinity in the Colorado River Basin. The Colorado River Basin Salinity Control Program emphasizes agricultural flows and reduces soil erosion due to agricultural activity; the program goals will be satisfied by BMPs to control sediment and salinity releases. Because open-cut pipeline crossings will be constructed during dry conditions or with use of active temporary water diversion, sediment recruitment will not be significant. Any negligible effects to overall Colorado River salinity would not be measureable.

The suggested edit from the third bullet from the above comment has been incorporated.

**BLM Comment 653:**

(Section 5.3.4.2.2.1, Page 5-211)

*5th paragraph: The Paria River, especially where the pipeline would cross, should not be classified as perennial. It is frequently dry at the Hwy 89 crossing. Intermittent would be a better term.*

**UDWRe Response:**

The text address the intermittent nature of Paria River flows.

**BLM Comment 654:**

(Section 5.3.4.2.2, Page 5-213)

**Intake and Discharge Construction**

- *6th line: Where would this upland disposal occur? Need to delineate/identify that here.*

**UDWRe Response:**

The upland disposal (of what would be the settled sand-sized particles of Navajo sandstone) would occur on the the water intake site which is a previously-disturbed quarry area used to construct Glen Canyon Dam.

**BLM Comment 655:**

(Section 5.3.4.2.2.2, Page 5-211)

**Intake and Discharge Construction**

- *9th line on page: What is meant by “disposal by land application”? And where would this disposal occur? Need to delineate/identify that here.*
- *10th line on page: So there could be “controlled” turbidity?*

**UDWRe Response:**

Refer to the response to BLM Comment 654.

The text has been revised to state "... and there will be no turbidity or other water quality effects in the Sand Hollow Reservoir".

**BLM Comment 656:**

(Section 5.3.4.2.2.2, Page 5-213)

**1st paragraph:** Also need to discuss the increased salinity (from transport of saline soils) into the Colorado River (reference the Colorado River Basin Salinity Control Program).

**UDWRe Response:**

**Refer to the response to BLM Comment 652.**

**BLM Comment 657:**

(Section 5.3.4.2.2.2, Page 5-214)

- **4th bullet in list:** Add that all refueling should be done at least 1/4 mile from any stream.
- **5th bullet in list:** Describe where this “land applied disposal” would occur.
- **6th bullet in list:** Need to identify what would be done with the sediment that would be captured by this silt

**UDWRe Response:**

**Temporary land application system using surface sprinklers would be used for land disposal. If dewatering is required during excavation, water would be pumped into a portable reservoir prior to discharge. If sufficient volume accumulates, water would be pumped into a temporary sprinkler system and sprinklers would discharge the water to land application/evaporation.**

**BLM Comment 658:**

(Section 5.3.4.2.2.2.3, Page 5-214)

*2nd line references operation and maintenance of powerlines, but more impacts could occur from construction of these transmission lines – please add that to the analysis.*

**6th/7th lines:** Need to identify the location(s) of these water discharges in order to have an accurate impacts analysis.

**UDWRe Response:**

**Refer to the responses to BLM Comments 467 and 468.**

**BLM Comment 659:**

(Section 5.3.4.2.2.2.3, Page 5-215)

**Drain Valves**

- **5th and 9th lines:** Need to identify the location(s) of where this discharge and penstock drainage would occur (in order to have an accurate impacts analysis).
- **2nd paragraph:** What measures would be included to avoid this erosion? At least need to summarize those measures here (in order to have an accurate impacts analysis).

**UDWRe Response:**

**BMPs are presented in Chapter 3 of the text.**



**BLM Comment 660:**

(Section 5.3.4.2.2.2.3, Page 5-216)

**Sand Hollow Reservoir Water Quality Effects**

- **4th line:** TDS acronym has already been defined, so don't redefine it here.
- **8th, 9th, 10th lines:** Insert "would" before "occur" (line 8) and "include" (lines 9, 10).

**Inflows**

- **1st bullet, 3rd/4th lines:** Delete the duplicative "acre-feet per year".
- **5th line:** Replace "after" with "from."
- **2nd bullet, 1st/2nd lines:** Much of the precipitation is also absorbed into the very sandy soils in the area (which have a high water holding capacity).
- **2nd/3rd lines:** Vegetation does not "consume" precipitation per se, so please rewrite this part of the sentence to read "... evaporates or soaks into the soil because of the minimal precipitation in the area and the sandy nature of the soils in the area that have a high water absorption capacity."

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 661:**

(Section 5.3.4.2.2.2.3, Page 5-219)

**Outflows from Sand Hollow**

- **4th/5th lines:** Please explain why there would be no releases at all, Even if the difference in inflow and loss is very slight?

**UDWRe Response:**

Once full, the reservoir is designed to operate at a steady state, with the combined Virgin River and LPP Project inflows equal to the sum of aquifer recharge, evaporation, and water use demands. Note that Sand Hollow is a groundwater recharge reservoir, built on top of Navajo Sandstone, and aquifer water supplies wells outside of the reservoir.

**BLM Comment 662:**

(Section 5.3.4.2.2.2.3, Page 5-220)

**Lake Powell and Lower Colorado River Effects**

- **2nd/3rd lines:** TDS acronym has already been defined, so don't redefine it here.
- **3rd/4th lines:** CRSS acronym has already been defined, so don't redefine it here.

**Lake Powell**

- **4th line:** Be consistent with Line 7, and replace "86K" with "86,249 ac-ft".

**Glen Canyon Dam Releases**

- **2nd line of 2nd paragraph:** Statement about estimating release temperatures for 2050-2056 on full pool elevations is not based on a very valid assumption given that lake levels over the past many years have been nowhere near full pool elevation. Please make the assumptions more realistic, and use something less than full pool elevation. (See lines 5-6 on page 5-221, where low pool levels are discussed ... this is much more valid an assumption on which to base this analysis.)

**UDWRe Response:**

The report previously assumed that the lake levels are at full pool elevations, however, this assumption has changed at the present time. Refer to the Bureau of Reclamation Analysis of Water Quality (Exhibit E) for the most updated Water Quality results. The updated Water Quality results were not available when the PLP was prepared.

The suggested edits from the first, second, and third bullets of the above comment have been incorporated.

**BLM Comment 663:**

*(Section 5.3.4.2.2.2.3, Page 5-221)*

**Lower Colorado River Salinity**

- **4th line of 1st paragraph:** DNF acronym has already been defined, so don't redefine it here.

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 664:**

*(Section 5.3.4.2.2.2.3, Page 5-222)*

**1st line after bullet list:** So there could be “controlled” discharge? And where would this discharge occur? Need to delineate/identify that here (or somewhere in this PLP).

**6th/7th lines after bullet list:** Where would this discharge to surface waters occur? Need to delineate/identify that here (or somewhere in this PLP).

**Last line on page:** Insert “as Lake Powell water replaces Virgin River water in the reservoir” to the end of the sentence.

**UDWRe Response:**

Refer to the response to BLM Comment 187.

The suggested edit from the third paragraph from the above comment has been incorporated.

**BLM Comment 665:**

*(Section 5.3.4.2.2.2.3, Page 5-223)*

**4th line on page:** Should be “standard operating procedures” (not “standard operationion procedures”).

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 666:**

*(Section 5.3.4.2.5, Page 5-223)*

*This whole section, especially the conclusions in the last paragraph of the No LPP alternative, appears to unnecessarily allege excessive environmental harm when that should be better proven, in this case to water quality and associated aquatic species.*

**UDWRe Response:**

**UDWRe disagrees that additional analysis and evaluation is needed to assess the No Lake Powell Water Alternative impacts.**

**BLM Comment 667:**

*(Section 5.3.4.2.5, Page 5-223)*

*This is more an alternatives question, but why wouldn't the "No Lake Powell Water Alternative" be the same as "No Action"?*

*No Action doesn't mean nothing at all would happen. It simply means the requested right-of-way would not be approved, and should have built in what other water supply options would WCWCD pursue in the absence of the pipeline (which IS the No Lake Powell Water Alternative).*

*2nd paragraph, 2nd sentence: The analysis of impacts should include an analysis with mitigations built in. Then impacts would be substantially less than stated here.*

*4th line of 3rd paragraph: Delete "Utah's" (Lake Powell occurs in Arizona too).*

*3rd line of 5th paragraph: Insert "of" after "cessation."*

**UDWRe Response:**

**The No Action Alternative and No Lake Powell Water Alternative are two distinct alternatives that FERC required UDWRe to analyze.**

**The suggested edits from the third and fourth paragraphs of the above comment have been incorporated.**

**BLM Comment 668:**

*(Section 5.3.4.2.5, Page 5-224)*

*3rd/4th lines on page: The analysis of impacts should include an analysis with mitigations built in. Then impacts would be substantially less than stated here. (Or are none proposed?) Please explain how a facility would be proposed without mitigations to prevent violating surface water quality standards. Sounds like this is just trying to over-estimate impacts of this alternative.*

*5th/6th lines on page: Delete "and the organisms inhabiting the river" – remember that this is not the aquatic resources section).*

**UDWRe Response:**

**The text has been revised to include additional mitigation for construction. Other effects, such as generation of RO brines, would result in approximately 2,000 acres of land that**

would be permanently repurposed for evaporation ponds; reduction in recharge to groundwater would reduce recharge to the Virgin River; no mitigation measures have been identified that could be applied to these effects.

The suggested edit from the second paragraph from the above comment has been incorporated.

**BLM Comment 669:**

*(Section 5.3.4.3.1, Page 5-224)*

**6th line of 1st paragraph:** Insert “a” before “general permit.”

**3rd/4th lines of 2nd paragraph:** BMP acronym has already been defined, so don’t redefine it here.

**UDWRe Response:**

The suggested edits have been incorporated.

**BLM Comment 670:**

*(Section 5.3.4.3.1, Page 5-224)*

**3rd line on page:** This SWPPP would also need to be developed in collaboration with the federal land management agencies.

**UDWRe Response:**

The text has been revised to indicate that the SWPPP would be developed in collaboration with federal land management agencies.

**BLM Comment 671:**

*(Section 5.3.4.3.1.1, Page 5-225)*

**Preservation of Existing Vegetation**

- **3rd line:** This plan would also need to be developed in collaboration with, and ultimately approved by, the federal land management agencies.

**Soil Binders**

- **1st line:** Use of soil binders would also need to be done in collaboration with, and ultimately approved by, the federal land management agencies.

**UDWRe Response:**

Your comment has been noted.

**BLM Comment 672:**

*(Section 5.3.4.3.1.1, Page 5-226)*

**Runoff Interception and Diversion**

- **1st line:** The design and planning for these structures would need to be developed in collaboration with, and ultimately approved by, the federal land management agencies.

**UDWRe Response:**

The text has been revised to state that the design and planning for these structures would be developed in collaboration with, and ultimately approved by, the federal land management agencies.

**BLM Comment 673:**

(Section 5.3.4.3.1.2, Page 5-227)

**Sediment Basins**

- **1st line:** *This plan would need to be developed in collaboration with, and ultimately approved by, the federal land management agencies.*
- **9th/10th lines:** *Where would these accumulated sediments be removed to?*

**UDWRe Response:**

The text has been revised to state that the design and planning for these structures would be developed in collaboration with, and ultimately approved by, the federal land management agencies. All sediment would be disposed of separately in off-channel areas within the pipeline Right-of-Way. The sediment would be spread out into land away from the stream channel that doesn't drain directly into the stream channel. Section 5.3.4.2.2.3 text will be changed to clarify that any disposal of sediment would be outside of the stream channel boundaries.

**BLM Comment 674:**

(Section 5.3.4.3.1.4, Page 5-227)

*Insert "and approved by the federal land management agency authorized officers" to the end of the first sentence.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 675:**

(Section 5.3.4.4.1, Page 5-227)

*There is NO explanation of why/how these conclusions were reached. Please add that.*

**UDWRe Response:**

The text has been revised to include a discussion of how effects were determined. Refer also to the response to FERC Comment 33.

**BLM Comment 676:**

(Section 5.3.4.4.1, Page 5-228)

**8th/9th lines on page:** *LTEMP acronym has already been defined, so don't redefine it here*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 677:**

*(Section 5.3.4.4.4, Page 5-229)*

*Lines 11, 16, 17: Delete “positive” ... only state that there is an impact, and not characterize it as positive or negative (since that may be dependent upon our perspective).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 678:**

*(Section 5.3.4.4.1, Page 5-227)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) - please add.*

**UDWRe Response:**

**A new subsection with header "NO ACTION ALTERNATIVE" has been added (See Section 5.4.4.4.5). There will be no impact under the No Action Alternative.**

**BLM Comment 679:**

*(Section 5.3.4.5.1, Page 5-229)*

*2nd paragraph, 2nd line: What is “DO”? Is it “dissolved oxygen”? Acronym is not defined, and not included in the list of acronyms at the beginning of the PLP.*

*7th line: TDS acronym has already been defined, so don’t redefine it here.*

**UDWRe Response:**

**"DO" is dissolved oxygen. This has been defined in the text and the glossary.**

**The suggested edit has been incorporated.**

**BLM Comment 680:**

*(Section 5.3.4.5.5, Page 5-230)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 681:**

(Section 5.3.5, Page 5-232)

*Do not use the term “Shallow Groundwater”. Just use “Groundwater” and “Surface Water”. Unless trying to distinguish between shallow and deep groundwater, just use “Groundwater” in the document.*

**UDWRe Response:**

**The use of the term “Shallow Groundwater” was intended to distinguish between shallow and deep groundwater. UDWRe’s view is that no revision to the text is needed.**

**BLM Comment 682:**

*(Figures 5-97 and 5-98, Pages 5-234 and 5235)*

*Seems the file label for these should be something other than “wells”. They are about surface water.*

**UDWRe Response:**

**The files have been renamed. The figures actually refer to groundwater-surface water interactions, not just surface water as suggested by the reviewer. The figures have been modified to include some omissions.**

**BLM Comment 683:**

*(Section 5.3.5.1.2, Page 5-237)*

*6th line on page: Is it known whether or not the forebay reservoir will be lined? Change to “will be” (vs. “may be”).*

**UDWRe Response:**

**At this time it is not known that the forebay reservoir would be lined. UDWRe’s view is that no revision to the text is needed.**

**BLM Comment 684:**

*(Section 5.3.5.1.3, Page 5-237)*

*1st through 3rd lines: The first sentence states that “only one location” could potentially be affected by groundwater-surface water interactions, but then the next sentence lists two locations (Sand Hollow Reservoir and Virgin River). Is it one or two locations that could be affected?*

**UDWRe Response:**

**As described in the reference Section 5.3.5.1.3, the potential effects of introducing an increased volume of water to Sand Hollow Reservoir would result in potential surface water impacts at the nearby Virgin River. The location is the Sand Hollow Reservoir and nearby Virgin River. This is a single location, much as “Washington County” is a single location even though it includes St. George, Hurricane, and other locales. UDWRe’s view is that no revision to the text is needed.**

**BLM Comment 685:**



(Section 5.3.5.1.4, Page 5-237)

**4th/5th lines of 1st paragraph:** *Statement that discharges into unlined reservoirs would occur at two locations is inconsistent with what it says on p. 5-232 (which says only the afterbay reservoir would not be lined). Please correct this inconsistency.*

**Last line on page** – *TDS acronym has already been defined, so don't redefine it here.*

**UDWRe Response:**

**First Comment Above:** The reference on Page 5-232 clearly refers to the three reservoirs constructed as part of the LPP project; the unlined reservoir is clearly identified among these three. Sand Hollow Reservoir, the other unlined reservoir, already exists and will not be constructed as part of the LPP project. UDWRe's view is that that no revision to the text is needed.

The suggested edit from the second paragraph from the above comment has been incorporated.

**BLM Comment 686:**

(Section 5.3.5.2.1, Page 5-238)

**1st sentence:** *Remember that this analysis of environmental effects applies to ALL alternatives (including No Action and No Lake Powell Water). Thus, this sentence is inaccurate and should be rewritten to say something such as "The following criteria were used in this evaluation to determine whether effects associated with any of the alternatives would be significant."*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 687:**

(Section 5.3.5.2.1.2, Page 5-238)

**1st sentence:** *Insert "or any of the alternatives" after "Project" – remember that this analysis of environmental effects applies to ALL alternatives (including No Action and No Lake Powell Water).*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 688:**

(Section 5.3.5.2.1.3, Page 5-238)

**1st sentence:** *Insert "or any of the alternatives" after "Project" – remember that this analysis of environmental effects applies to ALL alternatives (including No Action and No Lake Powell Water).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 689:**

*(Section 5.3.5.2.4.1, Page 5-238)*

*1st sentence: Delete “Project” – remember that this analysis of environmental effects applies to ALL alternatives (including No Action and No Lake Powell Water).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 690:**

*(Section 5.3.5.2.2.1, Page 5-238)*

*Please correct the spelling of “Cane Beds”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 691:**

*(Section 5.3.5.2.2.1, Page 5-239)*

**Shallow Groundwater**

- *1st/2nd line on page: BMP acronym has already been defined, so don’t redefine it here.*
- *7th line on page: Where would this disposal of dewatered groundwater occur? Need to delineate/identify that here.*
- *8th line on page: BMPs such as what? At least need to summarize those measures here (in order to have an accurate impacts analysis).*

**Groundwater Recharge**

- *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**Groundwater-Surface Water Interactions**

- *1st line: BMPs such as what? At least need to summarize those measures here (in order to have an accurate impacts analysis). Also need more of an analysis ... there isn’t enough included to support the claim of no effects.*

**Water Quality**

- *3rd line: Insert “to water quality” after “effects.”*

**UDWRe Response:**

**Bulleted responses are in the same respective order as bulleted comments:**

- **BMP acronym will not be redefined here.**
- **The location of disposal of dewatered groundwater is yet to be determined. Disposal of dewatered groundwater is a common practice that would require permitting by Utah and Arizona DEQ, subject to approval by the BLM or other land management agency, and would need to meet established protocols for protection of the environment; therefore it is not necessary to present those here.**

- Refer to second bulleted response.
- No water would be produced during construction other than dewatering water, which would either be discharged to the stream channel or would be land-applied or infiltrated nearby. While this could cause an extremely localized recharge effect, it would not result in a net recharge to the groundwater system. Because no water would be added to the system during construction, no analysis is required. UDWRe's view is that no revision to the text is needed.
- Refer to second bulleted response.
- The statement is in the Water Quality section and the intent is evident in the context presented. UDWRe's view is that no revision to the text is needed.

**BLM Comment 692:**

(Section 5.3.5.2.2.2, Page 5-239)

**Shallow Groundwater**

- *2nd line: Where would these drain releases occur? Need to delineate/identify specific washes/streams here.*
- *Page 5-232 states that there would be one unlined reservoir, not two. So is this statement about groundwater recharge occurring at two locations accurate? Please correct the inconsistency between these two sections.*

**UDWRe Response:**

The locations of drains will be determined during detailed design, they cannot be delineated until then, and the detailed design can't be prepared until after approval of the PLP. The reference on Page 5-232 clearly refers to the three reservoirs constructed as part of the LPP project; the unlined reservoir is clearly identified among these three. Sand Hollow Reservoir, the other unlined reservoir, already exists and will not be constructed as part of the LPP project. UDWRe's view is that no revision to the text is needed.

**BLM Comment 693:**

(Section 5.3.5.2.2.2, Page 5-240)

**Groundwater-Surface Water Interactions**

- *1st line: Explain why the water interactions would be the same as baseline conditions (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

The reviewer is referred to Section 5.3.5.1.3 for analysis. The effects analysis is presented under Section 5.3.5.1, Affected Environment, and Environmental Effects (impacts) are presented under Section 5.3.5.2. UDWRe's view is that no revision to the text is needed.

**BLM Comment 694:**

(Section 5.3.5.2.5.1, Page 5-241)

**Groundwater-Surface Water Interactions**

- *1st line: Explain why no effects would occur (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

Under the No Lake Powell Water Alternative, a reduction in potable outdoor water irrigation would occur in the WCWCD service area of St. George and surrounding areas, which would reduce the volume of groundwater recharge. The estimated reduction in residential outdoor potable water use by 2052 (the projected year when all LPP Proposed Action water would be utilized) would be between 51,633 acre-feet per year and 56,724 acre-feet per year when compared to the Proposed Action. UDWRe had estimated that approximately 50 percent of current residential, commercial and institutional irrigation water used for outdoor residential watering is consumed by evapotranspiration, and the remaining 50 percent is recharged to groundwater. This recharge eventually becomes return flow to the Virgin River. The reduction in outdoor water use and water efficiency improvements would reduce the percent of outdoor residential, commercial and institutional irrigation water recharged to the aquifer to about 30 percent of the total. Thus, from 15,490 to 17,017 acre-feet per year (21.4 to 23.5 cubic feet per second, on average) of return flow to the Virgin River would not occur by 2052, a reduction of nonsewered return flows of 68 to 72 percent when compared to the Proposed Action. This would be a measurable, significant impact. This discussion has been included in the text.

**BLM Comment 695:**

*(Section 5.3.5.2.5.2, Page 5-241)*

**Shallow Groundwater**

- *3rd line: Only a “minor” effect? What is this conclusion based upon? If depleting an aquifer, this seems like more than a minor impact.*

**Groundwater Recharge**

- *Explain why no effects would occur (can’t just say there are none without describing how that conclusion was reached).*

**Groundwater-Surface Water Interactions**

- *Explain why no effects would occur (can’t just say there are none without describing how that conclusion was reached).*

**Water Quality**

- *Explain why no effects would occur (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**Bulleted responses are in the same order as the respective comments:**

- **The text has been changed to indicate that there would be a measurable and significant impact to the aquifer.**
- **Refer to response to BLM Comment 694. This discussion has been added to the text.**
- **Refer to response to BLM Comment 694. This discussion has been added to the text.**
- **The No Lake Powell Water Alternative does not change baseline conditions for groundwater quality, so no effects would occur as a result of the alternative. This statement has been added to the text.**

**BLM Comment 696:**

*(Section 5.3.5.3, Page 5-241)*

*1st line: Replace “performed” with “implemented.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 697:**

*(Section 5.3.5.3.1, Page 5-241)*

*1st/2nd lines: BMP acronym has already been defined, so don’t redefine it here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 698:**

*(Section 5.3.5.3.2, Page 5-242)*

*1st sentence: Insert “in consultation with federal land management agencies” after “UDWRe.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 699:**

*(Section 5.3.5.3.3, Page 5-242)*

*3rd line: Replace “in” with “on.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 700:**

*(Section 5.3.5.3.4, Page 5-242)*

*2nd line: What would be done with this sediment – i.e., where would it be removed to?*

**UDWRe Response:**

**The text has been revised to clarify that all sediment would be stabilized in upland areas and spread away from where they can re-enter drainages, or be eroded back into the stream. Sediment basins, other BMPs would be used during construction.**

**BLM Comment 701:**

*(Section 5.3.5.3.5, Page 5-242)*

*2nd line: Stabilization and erosion control measures such as what? At least need to summarize those measures here (in order to have an accurate impacts analysis).*

*7th line: What would be done with these drilling fluids?*

**UDWRe Response:**

**Stabilization and erosion control measures will be developed as part of the detailed design, which can't be prepared until after approval of the PLP. BMPs will be consistent with requirements of BLM on BLM-administered lands. Drilling fluids would be managed and disposed of as required by drilling permits to be issued to the drilling contractors, specific to the application. UDWRe's view is that no revision to the text is needed.**

**BLM Comment 702:**

*(Section 5.3.5.3.7, Page 5-242)*

*2nd line: Need to add that waste generated on public lands would need to be removed from the public land to an acceptable/approved disposal site.*

**UDWRe Response:**

**The statement that wastes would be disposed of in accordance with prevailing codes and regulations includes management and removal of construction wastes on public lands. UDWRe's view is that no revision to the text is needed.**

**BLM Comment 703:**

*(Section 5.3.5.4.5, Page 5-243)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 704:**

*(Section 5.3.5.5.4, Page 5-243)*

*Last line: This is not the aquatic resources section, so remove this reference to impacts on aquatic resources.*

**UDWRe Response:**

**The comment appears to apply to Section 5.3.5.5.4. The suggested edit has been incorporated to that section.**

**BLM Comment 705:**

*(Section 5.3.5.5.5, Page 5-243)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The comment appears to mean that a new subsection 5.3.5.5.5 should be created. The suggested edit has been incorporated.**

**BLM Comment 706:**

*(Section 5.3.6.1.5.1, Page 5-251)*

**2nd line of sub-section:** *When referring to “aquatic species,”: ALL aquatic species or only INVASIVE aquatic species? Since this is the “invasives” section, it is assumed it is INVASIVE species. Please clarify. Also, delete “negative” – just state that we are considering “effects” (because all impacts are considered, whether adverse or beneficial).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 707:**

*(Section 5.3.6.1.5.1, Page 5-252)*

**4th/5th lines on page:** *EPA acronym has already been defined, so don’t redefine it here.*

**4th line of 2nd complete paragraph:** *Where would this filtrate material be disposal of? Need to identify that here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 708:**

*(Section 5.3.6.1.6.1, Page 5-254)*

**1st line on page:** *Please edit as follows: “... including Buckskin Gulch is, in part, managed as a wilderness ...”*

**3rd line on page:** *Please edit as follows: “... not in a wilderness study area and would be adjacent to ...”*

**11th line on page:** *Should be “floodplain” rather than “floodway.”*

**1st complete paragraph on page:**

- **3rd line:** *End of line should read “... the Paria Canyon- Vermilion Cliffs Wilderness are”.*
- **4th line:** *This statement is inaccurate (on the condition of the Paria River riparian area). Also, this is not correct terminology – the BLM (as well as USFS and NRCS) use “functioning condition” terminology” (i.e., “properly functioning,” “functional-at risk,” “non-functional,” and “unknown”), not “impaired” – see Technical Reference TR 1737-15 – Riparian Area Management.*



**UDWRe Response:**

The suggested edits from the first, second, and third paragraphs of the above comment have been incorporated. The terminology used for riparian function analysis was identified in the approved study plan, which was developed in consultation with BLM and addressed BLM review comments.

**BLM Comment 709:**

*(Section 5.3.6.1.6.2, Page 5-254)*

*Paragraph/sentence about fish in the lower Paria River: At least for the BLM portion in Arizona, there are only two species known to occur in the Paria River (not five) – desert sucker and speckled dace.*

*5th line of 3rd complete paragraph on page: “razorback” should not be capitalized.)*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 710:**

*(Section 5.3.6.1.6.2, Page 5-254)*

*Just a note that the only recorded fish the Monument has captured north of the bridge on Highway 89 in the Paria River is the speckled dace. No other fish mentioned have been recorded and are not likely this far up stream due to intermittent flows.*

**UDWRe Response:**

Your comment has been noted.

**BLM Comment 711:**

*(Section 5.3.6.1.6.2, Pages 5-254 to 5-256)*

*Please verify that Paria really means ‘muddy’ in Spanish. According to other sources Paria is a Paiute Indian word meaning “elk water”.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 712:**

*(Section 5.3.6.1.6, Page 5-255)*

*6th line of 1st paragraph: Insert “and Southeast Corner Alternative” after “Proposed Action.”*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 713:**

*(Figure 5-105, Page 5-256)*

*Insert “and Southeast Corner Alternative” after “Proposed Action” in title of figure.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 714:**

*(Section 5.3.6.1.6, Page 5-257)*

*Earlier in this sub-section the upstream portions of Kanab Creek (above Kanab City) are discussed, but nothing very far downstream of the creek crossing is discussed ... and there are fish and other aquatic species present in these areas. Please add a discussion of aquatic resources in this portion of Kanab Creek.*

**UDWRe Response:**

**There would be no measureable impacts on aquatic resources in the identified portion of the creek.**

**BLM Comment 715:**

*(Section 5.3.6.1.6.5, Page 5-259)*

***4th/5th lines of 1st paragraph:** Statement about the flow in the Virgin River being “substantial throughout the year” is inaccurate, at least for the part in Arizona. During the summer, large stretches of the river that are in the Virgin River Gorge go dry. Please correct this statement.)*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 716:**

*(Section 5.3.6.2.1, Pages 5-259 and 5-260)*

***Rating list for key factors:** This list (defining magnitude, extent, duration, and likelihood) applies to ALL resources analyzed in this chapter. Therefore, this list should be moved from here to the beginning of Chapter 5.*

***3rd paragraph:***

- **3rd line:** Delete “downstream water users,” (this is the “aquatic resources” section, not other water users).*
- **Last sentence:** Delete entire sentence – this is a “recreation resources” discussion, not “aquatic resources.”*

**UDWRe Response:**

**The suggested edits from the second paragraph of the above comment have been incorporated.**

**BLM Comment 717:**

*(Section 5.3.6.2.2, Page 5-261)*

**General Comment:** *Why is there no discussion of Kanab Creek, the Virgin River, and Sand Hollow Reservoir in this analysis, since they were introduced in Section 5.3.6.1.6? Please add this discussion (even if no impact, they should be mentioned).*

**9th line on page:** *This statement is not necessarily accurate ... remember that native habitat has adapted to local conditions (such as high sediment content of the water). Thus, this part of the sentence should be deleted.*

**UDWRe Response:**

**UDWRe's view is that the text with regards to the first part of the comment is appropriate. The text has been revised to address the second part of the comment.**

**BLM Comment 718:**

*(Section 5.3.6.2.3, Page 5-261)*

**General Comment:** *Why is there no discussion of Kanab Creek, the Virgin River, and Sand Hollow Reservoir in this analysis, since they were introduced in Section 5.3.6.1.6? Please add this discussion (even if no impact, they should be mentioned).*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate.**

**BLM Comment 719:**

*(Section 5.3.6.2.4, Page 5-261)*

**General Comment:** *Why is there no discussion of Kanab Creek, the Virgin River, and Sand Hollow Reservoir in this analysis, since they were introduced in Section 5.3.6.1.6? Please add this discussion (even if no impact, they should be mentioned).*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate.**

**BLM Comment 720:**

*(Section 5.3.6.2.5, Page 5-261)*

**General Comment:** *Why is there no discussion of Kanab Creek, the Virgin River, and Sand Hollow Reservoir in this analysis, since they were introduced in Section 5.3.6.1.6? Please add this discussion (even if no impact, they should be mentioned).*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate.**

**BLM Comment 721:**

*(Section 5.3.6.2.6, Page 5-261)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 722:**

*(Section 5.3.6.3, Page 5-261)*

**7<sup>th</sup> line:** *BMP acronym has already been defined, so don't redefine it here.*

**1<sup>st</sup> bullet:** *Wouldn't this also apply to Kanab Creek? Please add this.*

**2<sup>nd</sup> bullet:** *What would be done with the sediment trapped by the silt fences and straw bales? Need to identify that here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 722a:**

*(Section 5.3.6.3, Page 5-262)*

**3<sup>rd</sup> complete bullet on page:** *Revise end of BMP to read "... an upland area at least ¼ mile from the stream channel in order to isolate potential contaminants and prevent spills on soil and prevent contaminating stream substrates."*

**4<sup>th</sup> complete bullet on page:** *End of line should read "... on upland areas at least ¼ mile from the stream channel within spill..."*

**5<sup>th</sup> complete bullet on page:** *Where would this "land applied" watering occur? Need to identify those area(s) NOW.*

**6<sup>th</sup> complete bullet on page:** *What would be done with the silt fence and the sediment that it traps? Need to identify that here.*

**1<sup>st</sup> line after bullet list:** *Delete "positive and " ...- we should be giving an unbiased analysis of impacts, so simply state that there would be s short-term impacts.*

**UDWRe Response:**

**The suggested edits from the first, second, fourth, and fifth paragraphs from the above comment have been incorporated.**

**The land application would occur in areas approved by the landowners and/or administrators. Where the dewatering would be required and hence where the land application area(s) would be located are unknown at this time.**

**BLM Comment 723:**

*(Section 5.3.6.3, Page 5-263)*

*9th line on page: Which drainages would these water releases occur in? Need to identify those here in order to provide an accurate analysis of impacts to aquatic resources.*

*Last paragraph in section: What about the No Action Alternative? That alternative needs to be addressed also.*

**UDWRe Response:**

**See the portion of the response concerning land application in the response to BLM Comment 722a.**

**Discussion of the No Action Alternative has been added to the text.**

**BLM Comment 724:**

*(Section 5.3.6.4.4, Page 5-263)*

*2nd sentence: Need to discuss/expand on this more ... what is the basis for this conclusion? (Right now it is an unsubstantiated claim.)*

**UDWRe Response:**

**The cumulative effects of the No Lake Powell Water Alternative, which would eliminate residential outdoor watering, would reduce non-sewered return flows to the Virgin River throughout the St. George metropolitan area, which is analyzed in the final Alternatives Development study report. The reduced flow, combined with water diversions from the Virgin River, would have significant adverse cumulative effects on aquatic resources.**

**BLM Comment 725:**

*(Section 5.3.6.4.5, Page 5-263)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 726:**

*(Section 5.3.6.5.5, Page 5-264)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 727:**

*(Section 5.3.7.1, Page 5-266/1)*

*Recommend checking for updates to federally listed species using USFWS's IPAC system (<http://ecos.fws.gov/ipac/>). The species list considered is over 3 years old.*

**UDWRe Response:**

**Recent county sensitive species and migratory bird species list was obtained from IPaC on March 04, 2016.**

**BLM Comment 728:**

*(Table 5-76, Page 5-266)*

*Notes: Recommend checking for updates to federally listed species and referencing a more current source; See IPAC (<http://ecos.fws.gov/ipac/>).*

**UDWRe Response:**

**Refer to the response to BLM Comment 727.**

**BLM Comment 729:**

*(Section 5.3.7.1, Page 5-266)*

*In Table 5-76, woundfin is listed as having an Experimental, Non-Essential status (EXPN). The experimental populations for this species all occur outside of the project area, south of the Colorado River. This should either be explained in the text discussion for woundfin later in the document or (preferably) deleted from the table.*

**UDWRe Response:**

**The woundfin has been removed from the table.**

**BLM Comment 730:**

*(Section 5.3.7.1.1, Page 5-266)*

*It appears this section is trying to establish the basis (if not fulfill) the basis of a Biological Assessment. If this section is going to fulfill the requirements of Section 7 then BLM will have additional formatting and content related comments.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 731:**

*(Section 5.3.7.1.1.1, Page 5-267)*

*1st line under "Life History and Ecology" – insert "(5,900 feet)" after "1,800 m".*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 732:**

*(Section 5.3.7.1.1.1, Page 5-267)*

**General comment:** *There is a lot of information presented for Apache Trout just to dismiss it later in the document. Seems that a No Effect determination could be made up front with enough rationale being presented to allow USFWS to make a determination of whether they agree with a No Effect (i.e. distribution and critical habitat as it relates to the project) without going into detail on life history and status, life history and ecology, etc. If this level of detail is required, then the following comments apply:*

**Life History and Status: last sentence:** *“The USFWS (get rid of extra spacing) issued the Draft Apache Trout Recovery Plan, Second Revisions in 2007.” Comment: It appears the Apache Trout Recovery Plan (Second Revision), August 2009 should be updated as the reference document.*  
<http://www.fws.gov/southwest/es/arizona/ApacheTrout.htm>

**Distribution:** *Recommend defining and characterizing the distribution and critical habitat of the species in relation to the project and associated project features (i.e. proximity of habitats to the project. This narrows the focus down so the reader can see the crosswalk between presenting species and sets the analysis up with the rationale for dismissing the species because habitat/species is not expected to be impacted by the project/project features.*

*For the Section 7 Consultation it is recommended to dismiss the No Effect species early on and obtain concurrence with USFWS through the Section 7 process; however, typically it is not necessary to go into great detail other than presenting the rationale for why we determined a project was No Effect to a species in the BA.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 733:**

*(Section 5.3.7.1.1.1, Page 5-267)*

**Designated Critical Habitat (Apache Trout)** - *“There is currently no designated critical habitat for the Apache trout in the counties that would be crossed by the LPP Project.” Recommend adding the conclusion/determination of effects to critical habitat to this statement as follows: “therefore, there would be No Effect to designated critical habitat.” Also recommend that there be consistency between similar sections for each species. The Designated Critical Habitat for Bonytail Chub goes into greater detail and doesn’t indicate that it is focusing on just the counties that would be crossed by the LPP Project? Recommend consistency across species. What was done for Apache Trout in that Designated Critical Habitat should be discussed in relation to the LPP Project.*

**UDWRe Response:**

**The conclusion on the effects determination has been added to the final study report.**



**BLM Comment 734:**

(Section 5.3.7.1.1.2, Page 5-268/1)

*Life History and Status: Incorporate a reference for the updated recovery goals (August 1, 2002) which amend and supplement the 1990 Recovery Plan. Reference U.S. Fish and Wildlife Service. 2002. Bonytail (Gila elegans) Recovery Goals: amendment and supplement to the Bonytail Chub Recovery Plan. U.S. Fish and Wildlife Service, Mountain - Prairie Region (6), Denver, Colorado. [http://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/Bonytail\\_Chub/Bonytail-August-02.pdf](http://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/Bonytail_Chub/Bonytail-August-02.pdf)*

**UDWRe Response:**

**The reference has been incorporated into the final study report.**

**BLM Comment 735:**

(Section 5.3.7.1.1.2, Page 5-268)

*1st line under “Distribution” – Should be “a small number” (not “an small number”).*

*Last line under “Life History and Ecology” – Should be “affected” (not “effected”).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 736:**

(Section 5.3.7.1.1.2, Page 5-268/2)

*Distribution: Minor edit: “An small number of wild adult bonytail chub exist in Lake Mohave...” – recommended edit, delete the n (An).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 737:**

(Section 5.3.7.1.1.2, Page 5-268/4)

*Designated Critical Habitat - same comment regarding consistency of detail presented in this paragraph as commented on for Apache trout. This comment pertains to all Designated Critical Habitat sections for each species discussed in Section 5.3.7.1.*

**UDWRe Response:**

**Refer to the response to BLM Comment 733.**

**BLM Comment 738:**

(Section 5.3.7.1.1.3, Page 5-269)

**Distribution**

- **4th and 6th lines** – Acronym for U.S. Fish and Wildlife Service should be “USFWS” (not “FWS”).
- **4th, 5th and 6th lines** – “USFWS 2008b” is the reference for razorback sucker (at least according to Sec. 5.3.7.6). This citation appears to be incorrect.

**Life History and Ecology**

- **3rd and 5th lines** – “USFWS 2008b” is the reference for razorback sucker (at least according to Sec. 5.3.7.6). This citation appears to be incorrect.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 739:**

*(Section 5.3.7.1.1.3, Page 5-269)*

*Colorado pikeminnow - appears this species also has a designation of Experimental/Non-essential for the population in the Salt and Verde River drainages in AZ. Describe this designation and if the Salt and Verde River drainages do not occur in proximity to the LPP project then the listing status as it pertains to the project would just be “endangered”.*

**UDWRe Response:**

**The Salt and Verde river drainages would be unaffected by the LPP Project, therefore, no changes in the document are necessary.**

**BLM Comment 740:**

*(Section 5.3.7.1.1.3, Page 5-269/1)*

***Life History/Status:*** Incorporate U.S. Fish and Wildlife Service. 2002. Colorado pikeminnow (*Ptychocheilus lucius*) Recovery Goals: amendment and supplement to the Colorado Squawfish Recovery Plan. U.S. Fish and Wildlife Service, Mountain- Prairie Region (6), Denver, Colorado. [http://ecos.fws.gov/docs/recovery\\_plan/020828b.pdf](http://ecos.fws.gov/docs/recovery_plan/020828b.pdf)

**UDWRe Response:**

**The document has been incorporated.**

**BLM Comment 741:**

*(Section 5.3.7.1.1.3, Page 5-269/3)*

***Life History and Ecology:*** Minor edit (insert species or fish) as follows: *The Colorado pikeminnow is a long-distance migratory species...*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 742:**

(Section 5.3.7.1.1.4, Page 5-269)

**Listing History and Status**

- 5th line – “humpback” should not be capitalized.
- 10th line: USFWS acronym has already been defined, so don’t redefine it here.
- 10th line: There is no “USFWS 2002a” citation included in Sec. 5.3.7.6 – what should the correct citation be?

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 743:**

(Section 5.3.7.1.1.4, Page 5-270)

**Distribution** – LOTS of errors in the citations:

- Lines 3, 6, 12 - Should be “USFWS” (not “FWS”) –
- Line 3 – There is no “USFWS 2002c” citation included in Sec. 5.3.7.6 – what should the correct citation be?
- Lines 5-6 – There is no “Valdez and Clemmer 1982” citation included in Sec. 5.3.7.6 – add to list of citations.
- Line 3 – There is no “USFWS 2002a” citation included in Sec. 5.3.7.6 – what should the correct citation be?
- Line 14 – There is no “USGS 2007” – add to list of citations.

**Life History and Ecology** – LOTS of errors in the citations:

- Lines 2, 3, 5 – Should be “USFWS” (not “FWS”). Also, there is no “USFWS 2002c” citation included in Sec. 5.3.7.6 – what should the correct citation be?

**Designated Critical Habitat** – Define “RM” acronym here.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 744:**

(Section 5.3.7.1.1.5, Page 5-270)

**Listing History and Status**

- 2nd line – List of references (Sec. 5.3.7.6) has “USFWS 1995” as the Virgin River recovery plan ... is that the correct citation for Kanab ambersnail?

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 745:**

(Section 5.3.7.1.1.5, Page 5-270)

**Life History and Status:** Incorporate the 5 year review and summary evaluation completed in 2011 [https://ecos.fws.gov/docs/five\\_year\\_review/doc3885.pdf](https://ecos.fws.gov/docs/five_year_review/doc3885.pdf)

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 746:**

*(Section 5.3.7.1.1.5, Page 5-270)*

*Kanab ambersnail could also be eliminated fairly quickly without further ado. The species accounts are nowhere near project area. Also, genetic testing of the three lakes population determined them to not be the kanab ambersnail but rather another ambersnail. Worth checking into.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 747:**

*(Section 5.3.7.1.1.5, Page 5-271)*

**Distribution** – Several errors in the citations:

- **Lines 3, 6** – “USFWS 2008o” is an incorrect citation – please correct.
- **Line 6** – Please rewrite the beginning of this sentence to read “The Three Lakes Canyon location is in ...”
- **Line 7** – Please add the base meridian to this legal description.
- **Line 7** – List of references (Sec. 5.3.7.6) has “USFWS 1995” as the Virgin River recovery plan ... is that the correct citation for Kanab ambersnail?

**Life History and Ecology**

- **Line 4** – “USFWS 2010o” is an incorrect citation – please correct.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 748:**

*(Section 5.3.7.1.1.6, Page 5-271)*

*Numerous errors in listed citations:*

**Listing History and Status**

- **2nd line:** There is no “USFWS 1987” citation included in Sec. 5.3.7.6 – what should the correct citation be?

**Distribution**

- **Line 3:** There is no “Miller 1963” citation included in Sec. 5.3.7.6 – please add it.
- **Line 9:** There is no “Tibbets et al 1994” citation included in Sec. 5.3.7.6 – please add it.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 749:**

*(Section 5.3.7.1.1.6, Page 5-272)*

**Life History and Ecology**

- *NONE of the references cited are included in Sec. 5.3.7.6 – please add them.*

**UDWRe Response:**

The citations have been added to the list of references.

**BLM Comment 750:**

*(Section 5.3.7.1.1.7, Page 5-272)*

**Listing History and Status**

- *Lines 3, 4, 8-9: USFWS acronym has already been defined, so don't redefine it here.*
- *Lines 8-9: There is no "USFWS 1998" citation included in Sec. 5.3.7.6 – what should the correct citation be?*
- *Line 10: What about this species' status in Arizona?*

**Distribution**

- *Lines 2, 3: Should be "USFWS" (not "FWS"). This citation should be "USFWS 2002b" (Not "2002d").*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 751:**

*(Section 5.3.7.1.1.7, Page 5-273)*

**Distribution**

- *2nd line on page: Should be "USFWS" (not "FWS"). Also, This citation should be "USFWS 2002b" (Not "2002d").*

**Life History and Ecology**

- *Multiple places: Should be "USFWS" (not "FWS"). This citation should be "USFWS 2002b" (Not "2002d").*

**UDWRe Response:**

The suggested edits have been incorporated.

**BLM Comment 752:**

*(Section 5.3.7.1.1.8, Page 5-273)*

**Listing History and Status**

- *Lines 2, 3: Should be "USFWS" (not "FWS").*
- *Lines 12, 16: There is no "UDNR 2002" citation included in Sec. 5.3.7.6 – please add it.*

- **General comment:** Please add that this species (Virgin River chub) is a Wildlife Species of Concern” to Arizona Game and Fish Dept.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 753:**

(Section 5.3.7.1.1.8, Page 5-274)

**Distribution**

- **Lines 3, 4:** Neither reference is included in Sec. 5.3.7.6 – please add them.

**Designated Critical Habitat**

- **Lines 3-4:** FEMA acronym has already been defined in Ch. 5, so don’t redefine it here.
- **Line 10:** Remove extra space between the hyphen and “year.”

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 754:**

(Section 5.3.7.1.1.9, Page 5-274)

**Listing History and Status**

- **Line 3:** Should be “USFWS” (not “FWS”).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 755:**

(Section 5.3.7.1.1.9, Page 5-275)

**Listing History and Status**

- **8th and 13th lines on page:** There is no “UDNR 2002” citation included in Sec. 5.3.7.6 – please add it.
- **General comment:** Please add that this species (woundfin) is a Wildlife Species of Concern” to Arizona Game and Fish Dept.

**Distribution**

- **NONE** of the references cited are included in Sec. 5.3.7.6 – please add them.
- **Line 13:** Should be “1960s” (not “1960’s”).

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 756:**

(Section 5.3.7.1.1.9, Page 5-276)

**Designated Critical Habitat**

- All text in this paragraph (except the first sentence) is already present in Sec. 5.3.7.1.1.8, so don't need to duplicate it here – simply reference back to that section.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 757:**

(Section 5.3.7.1.2, Page 5-276)

*Title of this sub-section should be “Federal Sensitive Species and State/Local Agency Species of Concern”. Please change this (it is a more accurate characterization of the status of these species).*

*Text above bullet list should read: “Five aquatic species inhabiting streams and rivers within the LPP Project study area have been listed as sensitive by federal agencies or species of concern by state and local agencies. These species are:”*

*Need to add a “definition” of what constitutes a BLM sensitive species. The definition BLM uses is:*

*Sensitive species are usually rare within at least a portion of their range. Many are protected under certain State and/or Federal laws. Species designated as sensitive by the BLM must be native species found on BLM- administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:*

- 1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species*
- 2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.*

*All federally-designated candidate species, proposed species, and delisted species in the 5 years following delisting are included as BLM sensitive species.*

*Please add this to this section.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 758:**

(Section 5.3.7.1.2.1, Page 5-276)

**4th line of 1st paragraph:** *This citation should be either “UDWR 2006a” or “UDWR 2006b” ... which is it?*



***Last sentence of 1st paragraph:*** Please rewrite to read “The Virgin River provides habitat for the flannemouth sucker, which is listed by the BLM in Utah and Arizona as sensitive.” (Does this species occur in the Paria River also? It doesn’t in the Arizona portion of the river, at least on BLM land.)

***Last line on page:*** This citation should be “UDWR 2005b”.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 759:**

*(Section 5.3.7.1.2.1, Page 5-277)*

***1st line on page:*** Flannemouth sucker occurs in the Virgin River, so it DOES have a project nexus.

***3rd line on page:*** USGS acronym has already been defined in Ch. 5, so don’t redefine it here.

**UDWRe Response:**

**The Proposed Action has no impacts on the Virgin River.**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**BLM Comment 760:**

*(Section 5.3.7.1.2.2, Page 5-277)*

**2nd paragraph:**

- ***2nd line:*** This citation should be either “UDWR 2006a” or “UDWR 2006b” ... which is it?
- ***3rd line:*** Insert “the” before “bottom of stream”.
- ***Lines 5-12:*** NONE of the references cited are included in Sec. 5.3.7.6 – please add them.

**3rd paragraph:**

- ***Delete 2nd sentence (the one beginning with “The Paria River is listed ...”) – this sentence is already in the previous section on flannemouth sucker, so don’t need to repeat the same text here.***

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 761:**

*(Section 5.3.7.1.2.3, Page 5-277)*

***2nd line (also last line on page):*** Insert “BLM sensitive species and as a” after “Arizona as a”.

*This species also occurs in the Virgin River – add this.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 762:**

*(Section 5.3.7.1.2.3, Page 5-278)*

**2nd complete paragraph on page:** Delete sentence beginning with “The Paria River is listed ...” – this sentence is already in the section on flannelmouth sucker, so don’t need to repeat the same text here.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 763:**

*(Section 5.3.7.1.2.1, Page 5-277)*

**3rd paragraph:** Please rewrite the first sentence of this paragraph to read “The species occurs in the Virgin River system in the southwestern corner of Utah and the northwestern corner of Arizona.”

*Note: This species also occurs in the Paria River in Arizona ... please add that.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 764:**

*(Section 5.3.7.1.2.4, Page 5-278)*

**1st two paragraphs on page:** NONE of the references cited (except for the UDWR citation) are included in Sec. 5.3.7.6 – please add them. Please revise the UDWR citation to be “UDWR 2006a”.

Please add the following sentence to the end of the first paragraph on the page (where the species’ status is discussed): “This species is considered a state Wildlife Species of Concern in Arizona.”

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 765:**

*(Section 5.3.7.2, Page 5-279)*

Sentence should read “This section analyzes LPP Project effects on federally listed threatened and endangered aquatic species and designated critical habitat, federal sensitive species, and state and local agency ...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 766:**

*(Section 5.3.7.2, Page 5-279)*

*2nd/3rd lines: ESA acronym has already been defined in Ch. 5, so don't redefine it here.*

*2nd bullet: Explanation of this determination is not completely accurate. If impacts are "beneficial" then this determination "category" applies. Add that here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 767:**

*(Section 5.3.7.2.1.2, Page 5-280/1)*

*Recommend a simple summary table with the following columns: Species/Status/Effects Determination (break out the species determination and critical habitat determinations)/Detailed Rationale*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 768:**

*(Section 5.3.7.2.1.2, Page 5-280)*

*1st paragraph after bullet list, 5th line: "USFWS 2010o" is an incorrect citation – please correct. Is this comment referencing USFWS 2010p)?*

*2nd paragraph after bullet list, 3rd line: In this usage, spelling should be "effect" (not "affect").*

*2nd paragraph after bullet list, 8th line: I think "USFWS 2010o" is an incorrect citation – please correct.*

*3rd paragraph after bullet list, 5th line: I think "USFWS 2010o" is an incorrect citation – please correct.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 769:**

*(Section 5.3.7.2.1.2, Page 5-280)*

*Title of this sub-section should be "Federal Sensitive Species and State/Local Agency Species of Concern". Please change this.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 770:**

*(Section 5.3.7.2.2, Page 5-281)*

*Do not have a section on “Potential Effects and Alternatives Eliminated from Further Analysis.” Instead, organize this entire analysis the way the other resource sections are:*

*5.3.7.2.2 Proposed Action*

*5.3.7.2.2.1 Construction Effects*

*5.3.7.2.2.2 Operations and Maintenance Effects*

*5.3.7.2.2.3 Effects Determination*

*5.3.7.2.3 Existing Highway Alternative*

*5.3.7.2.3.1 Construction Effects*

*5.3.7.2.3.2 Operations and Maintenance Effects*

*5.3.7.2.3.3 Effects Determination*

*5.3.7.2.4 Southeast Corner Alternative*

*5.3.7.2.4.1 Construction Effects*

*5.3.7.2.4.2 Operations and Maintenance Effects*

*5.3.7.2.4.3 Effects Determination*

*5.3.7.2.5 No Lake Powell Water Alternative*

*5.3.7.2.5.1 Construction Effects*

*5.3.7.2.5.2 Operations and Maintenance Effects*

*5.3.7.2.5.3 Effects Determination*

*5.3.7.2.6 No Action*

*5.3.7.2.6.1 Construction Effects*

*5.3.7.2.6.2 Operations and Maintenance Effects*

*5.3.7.2.6.3 Effects Determination*

*The “effects determination” sub-section for each alternative would then discuss the overall effects of each alternative (which is what will go into the Biological Assessment). Thus, all of the text in Sections 5.3.7.2.2.1 through 5.3.7.2.2.8 would be merged into the overall analysis of impacts by alternative, and each statement on “potential effects from LPP Project” features being “eliminated from further analysis” would be deleted.*

*Note: There are no “transmission line alternatives” ... construction and operation of transmission lines is built into each of the separate alternatives.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 771:**

*(Section 5.3.7.2.2.1, Page 5-281/1)*

*Transmission Line Alternatives: Please clarify for me where it states “No new roads that could be sources of sediment recruitment to streams and rivers would be constructed...” do we need a*

*second description of use of existing roads where streams/ivers would be crossed that could be a source and/or are there any stream/river crossings where there are no existing roads?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 772:**

*(Sections 5.3.7.2.2.2 and 5.3.7.2.2.3, Page 5-281)*

*Merge discussions of Virgin River Critical and Crucial Habitats.*

**UDWRe Response:**

**The document has been organized and written in accordance with FERC guidance.**

**BLM Comment 773:**

*(Section 5.3.7.2.2.3, Page 5-281/1)*

*Virgin River Crucial habitat- this is the first time that “crucial” habitat has been discussed. Recommend identifying and characterizing crucial habitat for desert suck and Virgin spinedace in sections 5.3.7.1.2.4 and 5.3.7.1.2.5 respectively.*

**UDWRe Response:**

**The document has been organized and written in accordance with FERC guidance.**

**BLM Comment 774:**

*(Section 5.3.7.2.2.3<sup>UDWRe</sup>, Page 5-283)*

**2nd complete bullet on page:** *What would be done with the silt fence and the sediment that it traps? Need to identify that here.*

**4th complete bullet on page:** *Revise end of BMP to read “... an upland area at least ¼ mile from the stream channel in order to isolate potential contaminants and prevent spills on soil and prevent contaminating stream substrates.”*

**5th complete bullet on page:** *End of line should read “... on upland areas at least ¼ mile from the stream channel within spill ...”.*

**6th complete bullet on page:** *Where would this “land applied” watering occur? Need to identify those area(s) NOW.*

**7th complete bullet on page:** *What would be done with the silt fence and the sediment that it traps? Need to identify that here.*

**Last line on page:** *There is no “UBWR 2015a” citation included in Sec. 5.3.7.6 – please add it.*

**UDWRe Response:**

The suggested edits from the second and third paragraphs of the above comment have been incorporated.

The land application would occur in areas approved by the landowners and/or administrators. Where the dewatering would be required and hence where the land application area(s) would be located are unknown at this time.

The text has been revised to address the various items in the comment.

**BLM Comment 775:**

(Section 5.3.7.2.2.5, Page 5-284)

*Lines 4-5: This statement is inconsistent with page 3-48, which states that there could be overflow into Ft. Pierce Wash, which is a major tributary to the Virgin River. Please correct this inconsistency.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 776:**

(Section 5.3.7.2.2.6 Page 5-284)

*Last line of 3rd paragraph: There is no “UBWR 2015a” citation included in Sec. 5.3.7.6 – please add it.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 777:**

(Section 5.3.7.2.2.5, Page 5-284/1)

*Interbasin Transfer of LPP Water: “Although Sand Hollow Reservoir may be currently infested with quagga mussel and other species...” Refer to <http://wildlife.utah.gov/affected-waters.html> as of 2014 it had not been detected in this reservoir and 2015 results are pending.*

**UDWRe Response:**

Your comment has been noted.

**BLM Comment 778:**

(Section 5.3.7.2.2.6, Page 5-284)

*Where is the corresponding reference to UBWR 2015a in the references section at 5.3.7.6?*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 779:**

*(Section 5.3.7.2.2.6, Page 5-285)*

**Proposed Action Analysis**

• **5th/6th lines:** *The sentence which begins “In the Proposed Action analysis the No Action alternative assumes ... makes no sense. Is this referring to the Proposed Action or No Action?”*

**No Action Alternative Analysis**

• **Last sentence:** *This is an incomplete sentence ... please correct this.*

**Summary of Potential Hydrological Effects**

• **1st line:** *Should be “... Proposed Action and No Action alternatives ...” (remember that the Proposed Action is an alternative too).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 780:**

*(Section 5.3.7.2.2.6, Page 5-286)*

**Entire page:** *If this information (summary of hydrologic effects from Lake Powell elevations and Glen Canyon Dam releases) is relevant to the discussion of impacts to special status aquatic species, just reference where all of this information was previously stated in this PLP (Sec. 5.3.3.2.2.1).*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 781:**

*(Section 5.3.7.2.2.6, Page 5-287)*

**Reclamation Water Quality Modeling Results and CRSS Salinity Modeling Methodology:** *This information is already discussed in the Water Quality section (5.3.4) so only SUMMARIZE the results here, rather than repeat it again.*

**UDWRe Response:**

**The suggested edit has been incorporated into the text.**

**BLM Comment 782:**

*(Section 5.3.7.2.2.6, Page 5-288)*

**CRSS Salinity Modeling Methodology and CE-QUAL-W2 Water Quality Modeling Methodology:** *This information is already discussed in the Water Quality section (5.3.4) so only SUMMARIZE the results here, rather than repeat it again.*

**UDWRe Response:**



**The suggested edit has been incorporated into the text.**

**BLM Comment 783:**

*(Section 5.3.7.2.2.6, Pages 5-286 to 290)*

*Water Quality Modeling Results (p. 5-288) through Glen Canyon Dam Releases (p. 5-290): All of this is identical text to that on page 5-220 – no need to repeat it here; simply summarize it as it relates to aquatic species.*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 784:**

*(Sections 5.3.7.2.2.7 and 5.3.7.2.2.8, Page 5-291)*

*Merge both of these sections and move to Sec. 5.3.7.2.3,*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 785:**

*(Section 5.3.7.2.6, Page 5-291)*

*3rd line: Insert “sensitive/” before “species of concern”.*

*Last sentence on page (beginning with “The No Lake Powell Water Alternative construction ...): This sentence makes this entire paragraph very confusing, and doesn’t add anything to the analysis, so delete it.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 786:**

*(Section 5.3.7.2.6.1, Page 5-292)*

*The heading “5.3.7.2.6.1” needs to have a space preceding it to separate it from the paragraph above it.*

**UDWRe Response:**

**The text has been edited to address the comment.**

**BLM Comment 787:**

*(Section 5.3.7.2.6.3, Page 5-292)*

*Last sentence in this sub-section should read: “These effects would likely adversely affect the desert sucker and its crucial habitat.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 788:**

*(Section 5.3.7.2.6.4, Page 5-292)*

*Last sentence in this sub-section should read: “These effects would likely adversely affect the Virgin spinedace and its crucial habitat.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 789:**

*(Section 5.3.7.3.1, Page 5-293)*

*3rd line: Insert “for the protection of these species” after “No conservation measures”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 790:**

*(Section 5.3.7.3.2, Page 5-293)*

*3rd line: Insert “for the protection of these species” after “No conservation measures”.*

*6th line: Insert “for the protection of these species” after “... enhancement measures”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 791:**

*(Section 5.3.7.3.3, Page 5-293)*

*3rd line: Insert “for the protection of these species” after “No conservation measures”.*

*6th line: Insert “for the protection of these species” after “... enhancement measures”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 792:**

*(Section 5.3.7.3.5, Page 5-293)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 793:**

*(Section 5.3.7.4.5, Page 5-294)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 794:**

*(Section 5.3.7.4.5, Page 5-294)*

*The discussion of the impacts to special status aquatic species and their habitats from the “No Lake Powell Water Alternative” contains the following statement:*

*“The No Lake Powell Water Alternative would have long- term unavoidable adverse effects on special status aquatic species and their habitat resulting from the indirect action of restricting residential outdoor watering with potable water, which would eliminate groundwater recharge in the St.George metropolitan area that reports back to the river during the summer and fall months.”*

*The assertion that eliminating residential watering would eliminate groundwater recharge also appears in other sections in Chapter 5 (Groundwater Resources-5.3.5, Wetland and Riparian Resources-5.3.9, Wildlife-5.3.11, Special Status Wildlife Species-5.3.12). This conclusion seems to directly contradict information found in at least two sources cited in the analysis:*

*From Section 5.13C.7.1.1 in the Lake Powell Pipeline Phase I - Preliminary Engineering and Environmental Studies. UDWR (2009) – Appendix A in the Groundwater Resources Study Report:*

*“Volumetrically, the primary flow remains northward toward the Virgin River and away from the groundwater table mound. The dominant northward flow direction precludes recharge from the Pine Valley Mountains, northwest of the reservoir area, **considered the primary source of regional groundwater recharge** (USGS 2000), the Hurricane Cliffs to the east, and the Virgin River to the north and west. This suggests that natural recharge in the vicinity of the reservoir occurs **largely as a result of local precipitation** within Sand Hollow.” (Emphasis added)*

*And on page 51 in; USGS 2000. Geohydrology and Numerical Simulation of Ground-Water Flow in the Central Virgin River Basin of Iron and Washington Counties, Utah: Utah Department of Natural Resources Technical Publication No.116: “The Navajo and Kayenta aquifers are **recharged primarily by infiltration of precipitation** on the Navajo Sandstone and Kayenta Formation outcrop and seepage from streams crossing the outcrop. Additional sources of recharge include seepage from overlying and underlying formations, infiltration of unconsumed irrigation water, and seepage from Gunlock Reservoir.” (Emphasis added)*

*Residential landscape watering is not mentioned in either document as a significant source of groundwater recharge. Most residential watering in the St. George area occurs from spring to fall when much of the water is absorbed by plants or lost through evapotranspiration. When areas are watered excessively some water could be available for groundwater recharge, but this would seem to be a minor contribution to the overall recharge (since it is not mentioned as a source in the USGS or UDWR studies).*

*A reader of the PLP would not be led to the logical conclusion that the No Lake Powell Water Alternative (or No Action Alternative) will have significant adverse impacts to aquatic species or riparian habitat (including habitat for southwestern willow flycatcher and yellow-billed cuckoo) based on the information provided. Further study and analysis is needed on the baseline contributions to groundwater recharge from residential landscape watering (in acre feet per year), the relative importance of this source of recharge compared to the other significant sources detailed in the studies cited, and the relationship to water flows on the Virgin and Santa Clara Rivers.*

**UDWRe Response: (MWH)**

**The Alternatives Development final study report has been updated to include data, scientific references, and analyses supporting the conclusions of the impacts analysis of the No Lake Powell Water Alternative. Eliminating residential outdoor water use would decrease non-sewered return flows to the Virgin River by 77 to 80 percent, in the range of 21 to 23 cfs continually, throughout the St. George metropolitan area.**

**BLM Comment 795:**

*(Section 5.3.7.5.5, Page 5-294)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 796:**

*(Section 5.3.7.6 (Ref. List), Page 5-295)*

**Holden et al citation:** *Not cited in text – either cite in the text or delete from references list.*

**USFWS 1990 citation:** *This is no longer a valid BO ... it has been replaced by a BO on the new Arizona Strip RMP (dated 2007). Please delete this citation and add the new BO (if still applicable to this analysis).*

**UDWR Citations:** *The format used here is incorrect. If the same source has more than one reference from any year, all listed references should have a letter. In other words, the first 2005 citation should not be simply “2005” but should be “2005a”. Thus, the UDWR 2005 Biotics Database should be “UDWR 2005a”. Please correct this (and all other references in the same situation).*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 797:**

*(Section 5.3.8, Multiple Pages)*

**General comment:**

- *The discussion on vegetation is very confusing with the use of “ecological systems,” “associations,” and “alliances.” We at the BLM do not use this terminology. We use ecological zones (or regions), then simply refer to vegetation communities or vegetation types within those ecological zones. Please use that terminology in this entire discussion as it is a lot more straightforward, and much less confusing. All references to “ecological systems” would then be replaced with “vegetation communities” and references to “alliances” and “associations” would be deleted, and the veg. community names will likely need to be revised.*
- *“Mojave” is misspelled throughout this section. The only time where it is spelled “Mohave” is when referring to the County. When referring to the Mojave Desert, it is spelled with a “J” ... Please correct this.*

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

The suggested edit from the second bullet has of the above comment been incorporated.

**BLM Comment 798:**

*(Section 5.3.8.1.1, Page 5-297)*

*2nd and 3rd lines: Need to explain here why there is the extra 300-ft. wide area of potential effect for gypsum soils.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 799:**

*(Section 5.3.8.1.1.1, Pages 5-298 and 5-299)*

**Colorado Plateau Active and Stabilized Dune Veg. Comm.**

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 800:**

*(Section 5.3.8.1.1.1, Pages 5-299 and 5-300)*

**Colorado Plateau Big Sagebrush Shrubland Veg. Comm.**

**Geographic Distribution:** Insert “-Pauite” after “Kaibab” on 5th line.

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 801:**

*(Section 5.3.8, Page 5-300)*

*All relationships to U.S. national vegetation classification system. Those species list must be updated. Also those alliances and associations are very confusing. Please clarify.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 802:**

*(Section 5.3.8.1.1.1, Pages 5-299 and 5-300)*

**Colorado Plateau Blackbrush-Mormon Tea Shrubland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 803:**

*(Section 5.3.8.1.1.1, Pages 5-301 and 5-302)*

**Colorado Plateau Grassland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 804:**

*(Section 5.3.8, Pages 5-301 to 5-328)*

*Also many of these soils and plant ecological systems and geologic distribution such as the Colorado plateau grassland ecological system have many inclusions of other species and physiognomic types that may be present. Call it what it is like the ecological vegetation classification which is not properly addressed. Also those alliances and associations and new types, are not previously described. They are confusing and unknown.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 805:**

*(Section 5.3.8.1.1.1, Page 5-303)*

**Colorado Plateau Greasewood Flat Veg. Comm.**

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 806:**

*(Section 5.3.8.1.1.1, Pages 5-304 and 5-305)*

**Colorado Plateau Gypsum Badland Veg. Comm.**

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 807:**

*(Section 5.3.8.1.1.1, Pages 5-306 and 5-307)*

**Colorado Plateau Juniper Savanna Veg. Comm.**

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 808:**



(Section 5.3.8.1.1.1, Pages 5-307 and 5-308)

**Colorado Plateau Lower Montane Riparian Woodland and Shrubland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 809:**

(Section 5.3.8.1.1.1, Pages 5-308 and 5-309)

**Colorado Plateau Mixed Bedrock and Tableland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 810:**

(Section 5.3.8.1.1.1, Pages 5-310 and 5-311)

**Colorado Plateau Mixed Bedrock and Tableland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 811:**

(Section 5.3.8.1.1.1, Pages 5-311 and 5-312)

**Colorado Plateau Mixed Low Sagebrush Shrubland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 812:**

*(Section 5.3.8.1.1.1, Pages 5-312 and 5-313)*

**Colorado Plateau Mixed Low Sagebrush Shrubland Veg. Comm.**

**Geographic Distribution:**

- **4th line:** End of line should read "... from the Cockscomb west almost to Fredonia".
- **5th line:** Delete extra space before "south transmission."
- **7th/8th lines:** Middle part of this sentence should read "... and along the proposed existing highway alignment along Arizona Route 389 ..."

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The suggested edits from the bullets and second paragraph of the above comment have been incorporated.

With regard to the last two items in the comment, the document was organized and was written in accordance with FERC guidance.

**BLM Comment 813:**

*(Section 5.3.8.1.1.1, Pages 5-314 and 5-315)*

**Colorado Plateau Shrub-Steppe Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 814:**

*(Section 5.3.8.1.1.1, Pages 5-315 and 5-316)*

**Colorado Plateau Volcanic Rock and Cinder Land Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 815:**

(Section 5.3.8.1.1.1, Page 5-317)

**Colorado Plateau Wash Veg. Comm.**

**Geographic Distribution:**

• **5th line:** Replace “this is equal” with “which is equal”.

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The suggested edit from the bullet of the above comment has been incorporated.

With regard to the final two items in the comment, the document was organized and written in accordance with FERC guidance.

**BLM Comment 816:**

(Section 5.3.8.1.1.2, Multiple Pages)

**General comment:** As stated previously, “Mojave” is misspelled throughout Section 5.3.8. The only time where it is spelled “Mohave” is when referring to the County. When referring to the Mojave Desert, it is spelled with a “J” ... Please correct this.

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 817:**

(Section 5.3.8.1.1.2, Pages 5-318 and 5-319)

**Mojave Desert Active and Stabilized Dune Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 818:**

(Section 5.3.8.1.1.2, Pages 5-319 and 5-320)

**Mojave Desert Bedrock Cliff and Outcrop Veg. Comm.**

**Geographic Distribution:**

• **2nd line:** “afterbay” should not be capitalized”.

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

**The suggested edit from the bullet of the above comment has been incorporated.**

**With regard to the final two items in the comment, the document was organized and written in accordance with FERC guidance.**

**BLM Comment 819:**

*(Section 5.3.8.1.1.2, Pages 5-320 and 5-321)*

**Mojave Desert Blackbrush-Mormon Tea Shrubland Veg. Comm.**

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 820:**

*(Section 5.3.8.1.1.2, Pages 5-321 and 5-322)*

**Mojave Desert Creosotebush-White Bursage Desert Scrub Veg. Comm.**

**Geographic Distribution:**

• 5th line: *Delete “the” before “Sand Hollow Reservoir” (do not use “the” when using a proper name).*

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

**The suggested edit from the bullet of the above comment has been incorporated.**

**With regard to the final two items in the comment, the document was organized and written in accordance with FERC guidance.**

**BLM Comment 821:**

*(Section 5.3.8.1.1.2, Pages 5-322 and 5-323)*

**Mojave Desert Grassland Veg. Comm.**

***Physiognomy and Composition section:*** *Need to add the typical plant species that are found in this vegetation type.*

***Relationship to the US National Vegetation Classification System section:*** *Delete this entire section – it only confuses the discussion on vegetation and is not necessary.*

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 822:**

*(Section 5.3.8.1.1.2, Pages 5-323 and 5-324)*

**Mojave Desert Lower Montane Riparian Woodland and Shrubland Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 823:**

*(Figure 5-130, Page 5-323)*

*Figure 5-130 is not a good photo to represent the Mohave Desert Lower Montane riparian... Replace the photo with another that better represents that ecological system.*

**UDWRe Response:**

The photo has been replaced to address the comment.

**BLM Comment 824:**

*(Section 5.3.8.1.1.2, Pages 5-324 and 5-325)*

**Mojave Desert Mixed Desert Scrub Veg. Comm.**

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 825:**

*(Section 5.3.8.1.1.2, Pages 5-325 and 5-326)*

**Mojave Desert Shrub-Steppe Veg. Comm.**

**Geographic Distribution:**

• **1st line:** Add “Utah” after “Hurricane,”.

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The suggested edit from the bullet of the above comment has been incorporated.

The document was organized and written in accordance with FERC guidance.

**BLM Comment 826:**

*(Section 5.3.8.1.1.2, Pages 5-326 and 5-327)*

**Mojave Desert Volcanic Rock and Cinder Land Veg. Comm.**

**Geographic Distribution:**

• **3rd line:** Add a semi-colon after “rock lands”.

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The suggested edit from the bullet of the above comment has been incorporated.

The document was organized and written in accordance with FERC guidance.

**BLM Comment 827:**

*(Section 5.3.8.1.1.2, Pages 5-327 and 5-328)*

**Mojave Desert Wash Veg. Comm.**

**Geographic Distribution:**

• **4th line:** Replace “this is equal” with “which is equal”.

**Physiognomy and Composition section:** Need to add the typical plant species that are found in this vegetation type.

**Relationship to the US National Vegetation Classification System section:** Delete this entire section – it only confuses the discussion on vegetation and is not necessary.

**UDWRe Response:**

The suggested edit from the bullet of the above comment has been incorporated.

The document was organized and written in accordance with FERC guidance.

**BLM Comment 828:**

*(Section 5.3.8.1.2, Page 5-328)*

*Sub-section heading has the correct terminology (“VEGETATION COMMUNITIES”). This terminology should be used versus Ecological Systems, Alliances, and Associations.*

**UDWRe Response:**

Your comment has been noted.

**BLM Comment 829:**

(Table 5-81, Page 5-328)

*Do not use the Ecological Systems, Alliances, and Associations terminology ... simply use “Vegetation Communities.” Thus, this table needs to be revised.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 830:**

*(Section 5.3.8.1.2, Page 5-329)*

***Two paragraphs after Table 5-81:** This text should be put up front in Section 5.3.8 (to provide overall context for the discussion on Vegetation). And explain it using the much more understandable terminology of “Vegetation Communities.”*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 831:**

*(Section 5.3.8.2.1, Page 5-329)*

***2nd line in 1st paragraph:** Yes, this is correct terminology (i.e., “VEGETATION COMMUNITIES”).*

***Last line in 1st paragraph:** Insert “(i.e., permanent)” after “long-term”.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 832:**

*(Section 5.3.8.2.1, Page 5-329)*

***Fourth paragraph:** “An additional 252 acres of power transmission line ROW in the Mohave Desert Ecological Region would be part of the Proposed Action; however, only a portion of the vegetation communities in the power transmission line ROW would be directly affected by construction.” What portion of the 252 acres of vegetation that will be affected? 75%? 50%?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 833:**

*(Section 5.3.8.2.1, Page 5-329)*

***Fourth paragraph:** “The Proposed Action (Intake System, Water Conveyance System, Hydro System and KCWCD System) construction would directly affect vegetation communities covering 3,178 acres in the Colorado Plateau Ecological Region. An additional 988 acres of ROW in the Colorado Plateau Ecological Region for power transmission lines would be part of the Proposed*



*Action; however, only a portion of the vegetation communities in the power transmission line ROW would be directly affected by construction. The Proposed Action (Hydro System) construction would directly affect vegetation communities covering 308 acres in the Mohave Desert Ecological Region. An additional 252 acres of power transmission line ROW in the Mohave Desert Ecological Region would be part of the Proposed Action; however, only a portion of the vegetation communities in the power transmission line ROW would be directly affected by construction. A total 4,726 acres of vegetation communities would be within the Proposed Action construction ROW.”*

*The proposed action (IS, WCS, HS, and KCWCDS) construction would directly affect 4, 726 acres within the CP Ecological Region and the Mohave Desert Ecological Region. Within the Colorado Plateau Ecological region 3,178 acres would be affected by construction along with an additional 988 acres of ROW for transmission lines. Within the Mohave Desert Ecological Region 308 acres for construction and an additional 252 acres for transmission line ROW. After this section begin a new paragraph about the remainder of the paragraph.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 834:**

*(Section 5.3.8.2.1, Page 5-329)*

**Fourth paragraph:** *“The direct effects on vegetation would consist of clearing and grubbing vegetation within the pipeline, penstock, pump stations, and hydro stations ROW, and clearing and grubbing vegetation from transmission line tower bases, substations, switch stations, and staging areas. Shrub and herbaceous vegetation would not be cleared and grubbed from the ROW under the transmission lines. Effects on vegetation cleared and grubbed from ROW would be short-term. Trees would be cleared from the power transmission line ROW where they would conflict with power transmission lines. Effects on vegetation cleared and grubbed from the ROW would be short- term, except for trees removed from power transmission line ROW and vegetation removed for LPP Project features.*

*Vegetation removed for LPP Project features such as pump stations, hydro stations, regulating tank, reservoirs, substations, and switchyards would be long-term adverse effects on vegetation communities.”*

*Start the discussion with the removal of vegetation of the LP pipeline ROW first and give more detail as to what is going to happen specifically to vegetation along that ROW. In a separate paragraph describe the proposed action for vegetation removal within the transmission line ROW.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 835:**

*(Section 5.3.8.2.1, Page 5-329)*

*“Effects on vegetation cleared and grubbed from ROW would be short-term.”*

*Define short term. It will take many years to decades for cleared vegetation in many locations to be restored to pre-construction condition.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 836:**

*(Section 5.3.8.2.1, Page 2 5-329 and 5-330)*

***Fourth paragraph:*** “The Proposed Action operation would have no direct or indirect effects on vegetation communities. Operations and maintenance vehicles would drive on access roads constructed within the permanent ROW, which would be within the area of the construction ROW. Therefore, no additional vegetation effects would occur.”

*The discussion of access roads was not discussed in the proposed action nor have those locations been identified and put on a map. The construction of new access roads and maintenance of old access roads would have an effect on vegetation and should be discussed in more detail.*

**UDWRe Response:**

**The location of access roads would be determined during the design phase of the project. In general access roads would be located within the ROW disturbed during construction so no additional effects would occur.**

**BLM Comment 837:**

*(Section 5.3.8.2.2, Page 5-330)*

*“The Existing Highway Alternative (Intake System, Water Conveyance System, Hydro System and KCWCD System) construction would directly affect vegetation communities covering 2,300 acres in the Colorado Plateau Ecological Region. An additional 981 acres of ROW in the Colorado Plateau Ecological Region for power transmission lines would be part of the Existing Highway Alternative; however, only a portion of the vegetation communities in the power transmission line ROW would be directly affected by construction. The Existing Highway Alternative (Hydro System) construction would directly affect vegetation communities covering 308 acres in the Mohave Desert Ecological Region.”*

*An additional 252 acres of power transmission line ROW in the Mohave Desert Ecological Region would be part of the Existing Highway Alternative; however, only a portion of the vegetation communities in the power transmission line ROW would be directly affected by construction. A total 3,841 acres of vegetation communities would be within the Existing Highway Alternative construction ROW.”*

*Start the discussion with the total acres from both ecoregions, then within each ecoregion as suggested above. Begin a new paragraph with the direct effects.*

*It is stated within the transmission line ROW only a portion of the ROW will have vegetation removal. That portion needs to be further described in some kind of an amount.*

**UDWRe Response:**

**The text has been revised to address the comment. The document was organized and written in accordance with FERC guidance.**

**BLM Comment 838:**

*(Section 5.3.8.2.2, Page 5-330)*

*“The Existing Highway Alternative operation would have no direct or indirect effects on vegetation communities. Operations and maintenance vehicles would drive on access roads constructed within the permanent ROW, which would be within the area of the construction ROW. Therefore, no additional vegetation effects would occur.”*

*The discussion of access roads was not discussed in the proposed action nor have those locations been identified and put on a map. The construction of new access roads and maintenance of old access roads would have an effect on vegetation and should be discussed in more detail.*

**UDWRe Response:**

**Refer to the response to BLM Comment 836.**

**BLM Comment 839:**

*(Section 5.3.8.2.2, Page 5-330)*

*The last statement in this section is incorrect. If any trees or large shrubs start growing up under the transmission lines, trimming/removal of that vegetation WOULD occur. In addition, maintenance of the penstock may require digging to do needed repairs, which would also clear vegetation.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 840:**

*(Section 5.3.8.2.2, Page 5-330)*

*Please add that the penstock route under this alternative is along an existing highway (Highway 389), where much disturbance has already occurred (vs. the Proposed Action, which would have brand new disturbance). The impacts on vegetation would therefore be quite different (Proposed Action would be much more detrimental to vegetation than the Existing Highway Alternative).*

***Last line in 1st paragraph:*** Insert “(i.e., permanent)” after “long-term”.

*The last statement in this section is incorrect. If any trees or large shrubs start growing up under the transmission lines, trimming/removal of that vegetation WOULD occur. In addition, maintenance of the penstock may require digging to do needed repairs, which would also clear vegetation.*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**The text has been revised with respect to the last item in the comment.**

**BLM Comment 841:**

*(Section 5.3.8.2.3, Pages 5-330 and 5-331)*

*Please add that the penstock route under this alternative is along an existing highway (Highway 389), where much disturbance has already occurred (vs. the Proposed Action, which would have brand new disturbance). The impacts on vegetation would therefore be quite different (Proposed Action would be much more detrimental to vegetation than the Existing Highway Alternative).*

***Last line in 1st paragraph:*** Insert “(i.e., permanent)” after “long-term”.

*The last statement in this section is incorrect. If any trees or large shrubs start growing up under the transmission lines, trimming/removal of that vegetation WOULD occur. In addition, maintenance of the penstock may require digging to do needed repairs, which would also clear vegetation.*

**UDWRe Response:**

**UDWRe disagrees with the assertion in the first part of the comment.**

**The text has been revised with respect to the last two items in the comment.**

**BLM Comment 842:**

*(Section 5.3.8.2.3, Page 5-331)*

*This analysis is inaccurate. When considering effects to vegetation, we do not analyze landscaping/ornamental vegetation. In reality, the No Lake Powell Water Alternative would be beneficial to vegetation. Thus, please rewrite this section as follows:*

*“The No Lake Powell Water Alternative construction would have no direct effects on native vegetation communities in the St. George metropolitan area. Native vegetation would replace anthropogenic landscapes over time, except where residential areas would be served by secondary water for outdoor irrigation. As a result, native vegetation communities would increase in extent of distribution. Effects on native vegetation would therefore be long-term and beneficial.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 843:**

*(Section 5.3.8.2.3, Pages 5-330 and 5-331)*

***5.3.8.2.3 Southeast Corner Alternative.*** Please make the same adjustments as mentioned above in section 5.3.8.2.2 Existing Highway Alternative and 5.3.8.2.1 Proposed Action For proposed action layout.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 844:**

*(Section 5.3.8.2.4, Page 5-331)*

*“The No Lake Powell Water Alternative construction would have no direct effects on native vegetation communities in the St. George metropolitan area. Landscape vegetation would be indirectly affected by the No Lake Powell Water Alternative because of eliminating outdoor landscape irrigation with potable water. Desert vegetation relying only on precipitation would replace anthropogenic landscapes except where residential areas would be served by secondary water for outdoor irrigation. These effects on anthropogenic vegetation would be long-term”.*

*This statement appears to be biased against the No LPP water alternative in contrast with the pro-build alternatives. It should be rewritten to reflect how this alternative will achieve or not achieve the purpose and need.*

**UDWRe Response:**

**Refer to Section 3.5 in Chapter 3 of Exhibit for a discussion on the No Lake Powell Water Alternative.**

**BLM Comment 845:**

*(Section 5.3.8.2.4, Page 5-331)*

*“Topsoil stripped and stockpiled during construction would be spread over the surface of disturbed areas and tilled to form furrows to collect seeds and moisture to encourage revegetation success.”*

*Tilling of soil to create furrows would create patterns in the vegetation that affects visual resources and should be analyzed. This is another example of a design feature that needs to be included in the Proposed Action.*

**UDWRe Response:**

**Refer to the revised mitigation measure in Section 5.3.16.3.1.1.**

**BLM Comment 846:**

*(Section 5.3.8.2.4, Page 5-331)*

*“Landscape berms placed as part of pump station and hydro station construction would be planted with native shrubs common to the surrounding area in addition to seeding with endemic native plant species.”*

*Were these berms included in the action alternatives? This is another example of a design feature that needs to be included in the Proposed Action.*

**UDWRe Response:**

**Such design feature will be determined during the design phase of the project.**

**BLM Comment 847:**

*(Section 5.3.8.2.5, Page 5-331)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 848:**

*(Section 5.3.8.3.1, Page 5-331)*

**2nd line:** *The BLM does not require the use of only native species in our seed mixes (it's recommended, but not required). Thus, please rewrite this line to read "vegetated with an approved seed mix, through seedling replacement ..."*

**10th line:** *The BLM does not require the use of only native species in our seed mixes (it's recommended, but not required). Thus, please rewrite this line to read "vegetated with an approved seed mix, through seedling replacement ..."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 849:**

*(Section 5.3.8.3.1, Page 5-331)*

*"The ROW cleared and grubbed during construction would be revegetated with endemic native plant species through seeding replaced, prepared soils. Topsoil stripped and stockpiled during construction would be spread over the surface of disturbed areas and tilled to form furrows to collect seeds and moisture to encourage revegetation success. Hydroseeding would be used to apply seeds and mulch where prepared soils are suitable for this method of revegetation. Broadcast seeding would be used in areas not suitable for hydroseeding. Initial spray watering of the seeded soils would occur during the growing season to encourage seed germination and initial growth. Landscape berms placed as part of pump station and hydro station construction would be planted with native shrubs common to the surrounding area in addition to seeding with endemic native plant species. The landscape berms would be initially watered by spraying during the growing season to encourage seed germination, initial plant growth, and survival of shrub transplants. Revegetation of soils disturbed during construction would be performed as soon after final grading as possible to establish desired vegetation species and avoid invasive plant and noxious weed establishment. A portion of ROW along pipeline and penstock alignments not proximate to existing roads would be a permanent access road to allow access to valve vaults for operation and maintenance activities. The access road surfaces would not be revegetated."*

*There needs to be a discussion between the land agencies and private land owners with FERC in regards to collecting seeds prior to soil disturbance particularly from the special status species,*

*these are the true endemics of this area and they won't be provided for by seed companies. The BLM has a native plant development program that could potentially be utilized to make seed collections of all kinds which will result in better restoration success rates. Are there plans to discuss all this with the land agencies and private inholdings?*

**UDWRe Response:**

**Any management practices with regard to revegetation that can reasonably be expected on BLM managed lands would be appropriate for discussion with BLM.**

**BLM Comment 850:**

*(Section 5.3.8.3.5, Page 5-332)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 851:**

*(Section 5.3.8.4, Page 5-332)*

*“The Proposed Action would have no measurable cumulative effects on Colorado Plateau Region vegetation communities when combined with the LTEMP EIS and future Record of Decision (ROD) actions.”*

*LTEMP is not listed in the acronym list*

*To say there won't be cumulative effects further downstream in the Mohave Eco Region is not right. How does taking water out not have an effect on this alone let alone other resources?*

**UDWRe Response:**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**Modeling shows that the diversion of water from Lake Powell for the Lake Powell Pipeline Project has no measurable effect and therefore any potential cumulative effects would be minor and not attributable to the LPP Project.**

**BLM Comment 852:**

*(Section 5.3.8.4.1, Page 5-332)*

*Add the cumulative effects of Jackson Flat Reservoir and the Fredonia Flood Retarding Structure (on Colorado Plateau Region vegetation) – this is currently lacking in this analysis.*

***Last line of 1st paragraph:** Impacts would be “major” not “minor.” Add the number of acres that would be permanently lost from the project. When combined with loss of Mojave Desert vegetation from other development and fire, the effects would be significant.*



**3rd paragraph:** Impacts would be “significant” not “minor and short-term.” When combined with loss of Mojave Desert vegetation from other development and fire, the effects would be significant. And much of this loss of Mojave Desert vegetation would be permanent (not short-term).

**4th paragraph:** Impacts would be “significant” not “minor and short-term.” When combined with loss of Mojave Desert vegetation from other development and fire, the effects would be significant. And much of this loss of Mojave Desert vegetation would be permanent (not short-term) – the permanent facilities from the LPP project aren’t going away (and thus are “permanent”).

**Last line of 4th paragraph:** Please rewrite this line to read “Action effects mitigated somewhat by revegetation along portions of the ROW following construction.” Remember that new access roads for the project would not be revegetated.

**Last paragraph of section:** Please delete this entire paragraph. It is not relevant to this section (5.3.8) on upland vegetation communities along the Lake Powell Pipeline.

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 853:**

(Section 5.3.8.4.4, Page 5-333)

“The No Lake Powell Water Alternative would have long-term significant cumulative effects on vegetation communities in the St. George metropolitan area when combined with the St. George Water Reuse Project. Vegetation communities currently irrigated with reuse water produced by the St. George Regional Water Reclamation Facility would be permanently affected by the No Lake Powell Water Alternative because the reuse water would be re-purposed for use as raw water for reverse osmosis treatment. Long-term indirect cumulative effects could occur on vegetation communities in the St. George metropolitan area dependent on subsurface water that would be reduced by eliminating outdoor watering with potable water.”

Please enhance the Needs section.

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 854:**

(Section 5.3.8.5, Page 5-333)

“The Proposed Action would have short-term unavoidable adverse effects on Colorado Plateau Region and Mohave Desert Region vegetation communities during construction. The portions of the ROW used for access roads along the Proposed Action alignment would have long-term unavoidable adverse effects on Colorado Plateau Region and Mohave Desert Region vegetation communities because the road surfaces would not be revegetated. The Proposed Action features (pump stations, regulating tank, hydro stations, forebay reservoir, afterbay reservoir, substations and switchyards) would have long-term unavoidable adverse effects on Colorado Plateau Region

*and Mohave Desert Region vegetation communities because the footprint of these features (796 acres) would not be revegetated following construction.”*

*This needs to be edited. The words Colorado Plateau Region and Mohave Desert region is used three times each and the total acres is listed at the end where it needs to be stated at the beginning*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 855:**

*(Section 5.3.8.5.2, Page 5-334)*

*In reference to the last sentence in this sub-section, need to acknowledge that much MORE of this alignment would be along an existing highway (Highway 389), where much disturbance has already occurred (vs. the Proposed Action, which would have brand new disturbance). The cumulative impacts on vegetation would therefore be quite different (Proposed Action would be much more detrimental to vegetation than the Existing Highway Alternative).*

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written.**

**BLM Comment 856:**

*(Section 5.3.8.5.4, Page 5-334)*

*“The No Lake Powell Water Alternative would have long-term unavoidable adverse effects on vegetation communities in the St. George metropolitan area that would no longer receive reuse water from the St. George Regional Water Reclamation Facility and from reduced subsurface water caused by eliminating outdoor watering with potable water.”*

*Please enhance the Needs section.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 857:**

*(Section 5.3.8.5.4, Page 5-334)*

*This analysis is inaccurate. When considering effects to vegetation, we do not analyze landscaping/ornamental vegetation. And native vegetation does not need artificial watering to survive and flourish. In reality, the No Lake Powell Water Alternative would be beneficial to vegetation. Thus, please rewrite this section as follows:*

*“The No Lake Powell Water Alternative would have no long- term unavoidable adverse effects on native vegetation communities in the LPP Project area.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 858:**

*(Section 5.3.8.5.5, Page 5-334)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to vegetation under the No Action Alternative.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 859:**

*(Section 5.3.9.1, Page 5-335)*

***1st line:** Please define “jurisdictional waters.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 860:**

*(Table 5-82, Page 5-335)*

***General Comment:** Please add land ownership to this table.*

***Map Key lines 7, 8, 9:** Add a hyphen between “Staircase” and “Escalante.”*

**UDWRe Response:**

**The table has been removed from the text.**

**BLM Comment 861:**

*(Table 5-82, Page 5-336)*

***Map Key line 19:** This portion of Kanab Creek is intermittent, not perennial.*

***Map Key lines 19, 20, 21:** “wash” should not be capitalized.*

***Map Key line 23:** “west” should not be capitalized.*

***Map Key lines 24, 25:** Insert “-Paiute” after “Kaibab”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 862:**

(Table 5-82, Page 5-337)

**Map Key lines 29, 30:** Insert “-Paiute” after “Kaibab”.

**Map Key lines 37, 38, 41:** These portions of Ft. Pierce Wash are intermittent, not perennial.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 863:**

(Section 5.3.9.1.2, Page 5-339)

*The PFC process and functional ratings should be defined and cited. Was Technical Reference 1737-15 used? (If not, it should be.)*

**UDWRe Response:**

**PFCs have been described in the text and the technical reference was used.**

**BLM Comment 864:**

(Section 5.3.9.1.2, Page 5-339)

*Please rewrite the last sentence of the first paragraph as follows: “Table 5-83 lists the riparian areas within the area of potential effect, along with the acreage of each riparian area.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 865:**

(Table 5-83, Page 5-339)

*Please reference the Arizona Strip Proposed Resource Management Plan/Final EIS (page 3-39), which lists the riparian areas on BLM-administered land on the Arizona Strip. Please verify that the “riparian areas” included in Table 5-83 (and subsequent tables) are, by definition, wetlands/riparian areas.*

**UDWRe Response:**

**The referenced page (Page 3-39) in the Arizona Strip Proposed Resource Management Plan/Final EIS does not include a definition of wetlands/riparian areas. The LPP wetlands and riparian study report defines riparian areas in the study area as, “those areas supporting riparian vegetation; including hydrophytic vegetation as identified in the National List of Plant Species that Occur in Wetlands (Reed 1988).”**

**BLM Comment 866:**

(Section 5.3.9.1.2, Page 5-339)

*Please define “Proper Functioning Condition” and other functional condition classes (“functional-at risk,” “non- functional,” and “unknown”) – see Technical Reference TR 1737-15 – Riparian Area Management, pages 5 and 8.*

**UDWRe Response:**

**Definitions for the terms identified in the comment have been added to the text.**

**BLM Comment 867:**

*(Table 5-84, Page 5-340)*

*Table 5-84 should show ownership of each of the riparian areas.*

**UDWRe Response:**

**The table has been revised to address the comment.**

**BLM Comment 868:**

*(Table 5-84, Page 5-340)*

*Please reference the Arizona Strip Proposed Resource Management Plan/Final EIS (page 3-39), which lists the riparian areas on BLM-administered land on the Arizona Strip. Please verify that the “riparian areas” included in Table 5-84 (and subsequent tables) are, by definition, wetlands/riparian areas. If an area is not classified as a “wetland/riparian area” then a PFC assessment is not done on it and those “stream” reaches would need to be deleted from this table.*

**UDWRe Response:**

**The referenced page (Page 3-39) in the Arizona Strip Proposed Resource Management Plan/Final EIS does not include a definition of wetlands/riparian areas. The LPP wetlands and riparian study report defines riparian areas in the study area as, “those areas supporting riparian vegetation; including hydrophytic vegetation as identified in the National List of Plant Species that Occur in Wetlands (Reed 1988).”**

**BLM Comment 869:**

*(Table 5-85, Page 5-340)*

*Please reference the Arizona Strip Proposed Resource Management Plan/Final EIS (page 3-39), which lists the riparian areas on BLM-administered land on the Arizona Strip. Please verify that the “riparian areas” included in Table 5-85 (and subsequent tables) are, by definition, wetlands/riparian areas. If an area is not classified as a “wetland/riparian area” then a PFC assessment is not done on it and those “stream” reaches would need to be deleted from this table.*

**UDWRe Response:**

**Refer to the response to BLM Comment 868.**

**BLM Comment 870:**

*(Table 5-85, Page 5-340)*

*In Table 5-85, the column headings “Percent total functional points”, “Functional Units”, “Red Flag”, or “Wetland Category” should be defined.*

**UDWRe Response:**

**Definitions for the terms identified in the comment have been added to the table.**

**BLM Comment 871:**

*(Table 5-86, Page 5-341)*

*Please reference the Arizona Strip Proposed Resource Management Plan/Final EIS (page 3-39), which lists the riparian areas on BLM-administered land on the Arizona Strip. Please verify that the “riparian areas” included in Table 5-86 are, by definition, wetlands/riparian areas. If an area is not classified as a “wetland/riparian area” then a PFC assessment is not done on it and those “stream” reaches would need to be deleted from this table.*

**UDWRe Response:**

**Refer to the response to BLM Comment 868.**

**BLM Comment 872:**

*(Table 5-86, Page 5-341)*

*The totals at the bottom of Table 5-86 don’t add up properly ... please correct this.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 873:**

*(Section 5.3.9.1.3, Page 5-341)*

*Were scour chains and crest gages installed in 2009? Were any installed on BLM-administered lands? If so, were they authorized by the BLM? Are they still in place? Please elaborate.*

**UDWRe Response:**

**Scour chains and crest gages were installed on BLM-administered land. BLM did not require authorization to install the items and the items are believed to still remain in place.**

**BLM Comment 874:**

*(Section 5.3.9.1.8, Page 5-343)*

*2nd line: Which LPP crossing does this refer to? For which alternative? Please clarify in text.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 875:**

*(Section 5.3.9.1.9, Page 5-341)*

*2nd line: Which LPP crossing does this refer to? For which alternative? Please clarify in text.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 876:**

*(Section 5.3.9.1.10, Page 5-344)*

*2nd line: Which LPP crossing does this refer to? For which alternative? Please clarify in text.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 877:**

*(Section 5.3.9.1.11, Page 5-344)*

*2nd line: Which LPP crossing does this refer to? For which alternative? Please clarify in text.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 878:**

*(Section 5.3.9.1.12, Page 5-344)*

*2nd line: Which LPP crossing does this refer to? For which alternative? Please clarify in text.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 879:**

*(Section 5.3.9.1.4, Page 5-345) \*

*Sub-section number should be corrected “p5.3.9.1.4”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 880:**

*(Section 5.3.9.2.1, Page 5-346)*

*2nd line of 2nd bullet: End of line should read “... overall loss of or gain in wetland areas”.*

**UDWRe Response:**



**The suggested edit has been incorporated.**

**BLM Comment 881:**

*(Section 5.3.9.2.2, Page 5-346)*

*Do not have a section on “Potential Effects Eliminated from Further Analysis” – a proper NEPA analysis does not have effects that are eliminated from further analysis. Instead, merge this text into the overall analysis of impacts by alternative, and if a particular aspect/feature of the LPP Project would not impact wetlands/riparian areas, just point that out by alternative.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 882:**

*(Section 5.3.9.2.3.1, Page 5-346)*

*This is an inadequate analysis. Need more discussion on impacts to wetlands from the Proposed Action ... there is basically none here. Please explain how the conclusion was reached that short-term effects on wetlands from the Proposed Action would not be significant.*

**UDWRe Response:**

**The text has been revised to address the comment. The wetland no longer falls within the Proposed Action Study Area.**

**BLM Comment 883:**

*(Table 5-88, Page 5-347)*

*Please reference the Arizona Strip Proposed Resource Management Plan/Final EIS (page 3-39), which lists the riparian areas on BLM-administered land on the Arizona Strip. Please verify that the “riparian areas” included in Table 5-88 are, by definition, wetlands/riparian areas. If an area is not classified as a “wetland/riparian area” then a PFC assessment is not done on it and those “stream” reaches would need to be deleted from this table.*

**UDWRe Response:**

**Refer to the response to BLM Comment 868.**

**BLM Comment 884:**

*(Section 5.3.9.2.3.2, Page 5-347)*

***Last 2 lines of sub-section:***

- *BMP acronym has already been defined in Ch. 5, so don’t redefine it here.*
- *Need to provide a rationale for the last sentence (regarding impacts to riparian areas not being significant). The present analysis does not explain this well at all.*

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment has been incorporated.**

**The text was revised to address the item in the second bullet of the comment.**

**BLM Comment 885:**

*(Section 5.3.9.2.3.4, Page 5-348)*

*5th line: How would water releases from drain valves be controlled? Need to explain that here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 886:**

*(Section 5.3.9.2.3.4, Page 5-349)*

*This is an inadequate analysis. Need more discussion on impacts to wetlands from the Existing Highway Alternative ... there is basically none here. Explain how the conclusion was reached that short-term effects on wetlands from the Existing Highway Alternative would not be significant.*

**UDWRe Response:**

**The text has been revised to address the comment. The wetland no longer falls within the Existing Highway Alternative Study Area.**

**BLM Comment 887:**

*(Section 5.3.9.2.4.2 and Table 5-90, Page 5-349)*

***3rd/4th lines in first paragraph:** Please reference the Arizona Strip Proposed Resource Management Plan/Final EIS (page 3-39), which lists the riparian areas on BLM-administered land on the Arizona Strip. Please verify that the “riparian areas” included in Table 5-90 are, by definition, wetlands/riparian areas. If an area is not classified as a “wetland/riparian area” then a PFC assessment is not done on it and those “stream” reaches would need to be deleted from this table. Also, if an area is not by definition a wetland or riparian area, then calling it one and rating it as “non-functional” is misleading (if it’s not a riparian area, it could never be functional).*

***Last sentence in second paragraph:** This is an inadequate analysis. Need more discussion on impacts to riparian areas from the Existing Highway Alternative ... there is basically none here. How was the conclusion reached that short-term effects on riparian areas from the Existing Highway Alternative would not be significant?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 888:**

*(Section 5.3.9.2.6, Page 5-350)*

*There are no “transmission line alternatives” ... construction and operation of transmission lines is built into each of the separate alternatives. Thus, merge this section (and sub- sections 5.3.9.2.6.1 through 5.3.9.2.6.4) into the previous sub- sections on impacts by alternative.*

**UDWRe Response:**

**UDWRe’s view is that the organization of the section is appropriate.**

**BLM Comment 889:**

*(Section 5.3.9.2.6.1, Page 5-351)*

*This is an inadequate analysis. Need more discussion on impacts to wetlands from the transmission line systems ... there is basically none here. Please explain how the conclusion was reached that Gould Wash:*

- 1. would not be directly affected by construction?*
- 2. would be indirectly affected?*
- 3. potential effects would be implementing BMPs? And what BMPs are being referred to?*

*There is not enough information here to support the conclusions.  
Also, since there are no distinct “transmission line alternatives,” merge this section into the previous sub-sections on impacts by alternative.*

**UDWRe Response:**

**Text has been added to clarify that no ground would be disturbed in wetland/riparian areas.**

**BLM Comment 890:**

*(Section 5.3.9.2.6.2, Page 5-351)*

*4th line in section: Should be “Functionalal-At Risk.”*

*Last line of section: How would implementing construction BMPs minimize impacts? And which BMPs are being referred to?)*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**BMPs that would minimize impacts to wetlands, riparian areas, and jurisdictional waters are described in Chapter 5.**

**BLM Comment 891:**

*(Section 5.3.9.2.6.3, Page 5-351)*

*Last line of section: How would implementing construction BMPs minimize impacts? And which BMPs are being referred to?*

**UDWRe Response:**

**Refer to the response to the last item in BLM Comment 890.**

**BLM Comment 892:**

*(Section 5.3.9.2.6.4, Page 5-351)*

*Need more discussion on impacts to wetlands, riparian areas, and jurisdictional waters from operation and maintenance of the LPP. There is none here. How was this conclusion reached?*

**UDWRe Response:**

**The text has been removed. No ground-disturbing activities would occur in the vicinity of these resources under this alternative.**

**BLM Comment 893:**

*(Section 5.3.9.2.7, Page 5-352)*

*This discussion of the impacts to wetlands/riparian areas from the “No Lake Powell Water Alternative” contains the following statement:*

*“The No Lake Powell Water Alternative could have significant indirect effects on riparian areas along the Virgin River and its tributary streams under the influence of groundwater recharge from potable water supplies used for outdoor residential landscape watering. Eliminating outdoor watering of residential landscapes with potable water would nearly eliminate all irrigation recharge to surface and subsurface soils and shallow aquifers in the St. George metropolitan area. Reaches of area streams tributary to the Virgin River and some reaches of the Virgin River could become losing reaches.”*

*The assertion that eliminating residential watering would eliminate groundwater recharge also appears in other sections in Chapter 5 (Groundwater Resources-5.3.5, Special Status Aquatic Species-5.3.7, Wildlife-5.3.11, Special Status Wildlife Species-5.3.12). This conclusion seems to directly contradict information found in at least two sources cited in the analysis:*

*From Section 5.13C.7.1.1 in the Lake Powell Pipeline Phase I - Preliminary Engineering and Environmental Studies. UDWR (2009) – Appendix A in the Groundwater Resources Study Report:*

*“Volumetrically, the primary flow remains northward toward the Virgin River and away from the groundwater table mound. The dominant northward flow direction precludes recharge from the Pine Valley Mountains, northwest of the reservoir area, considered the primary source of regional groundwater recharge (USGS 2000), the Hurricane Cliffs to the east, and the Virgin River to the north and west. This suggests that natural recharge in the vicinity of the reservoir occurs largely as a result of local precipitation within Sand Hollow.” (Emphasis added)*

*And on page 51 in; USGS 2000. Geohydrology and Numerical Simulation of Ground-Water Flow in the Central Virgin River Basin of Iron and Washington Counties, Utah: Utah Department of Natural Resources Technical Publication No. 116:*

*“The Navajo and Kayenta aquifers are recharged primarily by infiltration of precipitation on the Navajo Sandstone and Kayenta Formation outcrop and seepage from streams crossing the outcrop. Additional sources of recharge include seepage from overlying and underlying formations, infiltration of unconsumed irrigation water, and seepage from Gunlock Reservoir.” (Emphasis added)*

*Residential landscape watering is not mentioned in either document as a significant source of groundwater recharge. Most residential watering in the St. George area occurs from spring to fall when much of the water is absorbed by plants or lost through evapotranspiration. When areas are watered excessively some water could be available for groundwater recharge, but this would seem to be a minor contribution to the overall recharge (since it is not mentioned as a source in the USGS or UDWR studies).*

*As a reader of the PLP, we are not led to the logical conclusion that the No Action Alternative would have significant adverse impacts to wetlands/riparian areas based on the information provided. Further study and analysis is needed on the baseline contributions to groundwater recharge from residential landscape watering (in acre feet per year), the relative importance of this source of recharge compared to the other significant sources detailed in the studies cited, and the relationship to water flows on the Virgin and Santa Clara Rivers.*

**UDWRe Response:**

**Please see the response to BLM Comment 694. This discussion has been added to the text.**

**BLM Comment 894:**

*(Section 5.3.9.3, Page 5-352)*

**3rd line of 1st paragraph:** *BMP acronym has already been defined in Ch. 5 (including this section), so don't redefine it here.*

**1st bullet:** *Are any roads (whether temporary or permanent) proposed to cross any wetland/riparian area? If so, how does that relate to the restrictions implied by this BMP?*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**It is unknown at this time the extent, if any, of temporary or permanent roads that would be proposed to cross any wetland or riparian area. Such determinations will be made during the detailed design phase of the project. The first approach would be to avoid any such crossings to the maximum extent possible. Should it be necessary to construct temporary or permanent roads across any wetland or riparian area the proposed clearing of vegetation would be limited to the greatest extent possible.**

**BLM Comment 895:**

*(Section 5.3.9.3, Page 5-353)*

**1st complete bullet on page:** *What would be done with the sediment trapped by the silt fences and straw bales? Need to identify that here.*

**5th complete bullet on page:** *Revise 1st line of this BMP to read “... performed on upland areas within spill containment areas at least ¼ mile from stream channels to prevent ...”*

**6th complete bullet on page:** *Where would this “land applied” watering occur? Need to identify those area(s) NOW.*

**7th complete bullet on page:** *What would be done with the silt fence and the sediment that it traps? Need to identify that here.*

**9th complete bullet on page:** *Where would this excavated material be disposed of – what location(s) are being considered? Need to identify that here.*

**10th complete bullet on page:** *Where would this sand and gravel material be imported from – what location(s) are being considered? Need to identify that here.*

**UDWRe Response:**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**The land application would occur in areas approved by the landowners and/or administrators. Where the dewatering would be required and hence where the land application area(s) would be located are unknown at this time.**

**The text has been revised to address the various items in the comment.**

**BLM Comment 896:**

*(Section 5.3.9.3, Page 5-354)*

**4th bullet on page:** *Insert “or wetland” after “sensitive aquatic.”*

**3rd line of 1st paragraph:** *Insert “after appropriate analysis and approval” after “could be implemented.”*

**Last sentence in 2nd paragraph:** *End of sentence should read “after appropriate analysis and approval, and additional monitoring would occur.”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 897:**

*(Section 5.3.9.4.4, Page 5-355)*

**Last sentence in section:** *This is an inadequate analysis. Need more discussion on impacts to riparian areas from the No Lake Powell Water Alternative ... there is basically none here. How was the conclusion reached that cumulative effects would be significant?*

*We also question this statement, and think it is not accurate. Please see Comment 893 on Section 5.3.9.2.7 regarding this issue (i.e., the assertion that not having residential watering would adversely affect groundwater recharge, and therefore riparian areas along the Virgin River).*

**UDWRe Response:**

The Alternatives Development final study report has been updated to include data and analysis supporting the impact conclusions resulting from eliminating residential outdoor watering and it's resulting reductions in non-sewered return flows to the Virgin River. Non-sewered return flows are projected to reduce by 77 to 80 percent, which would be approximately 21 to 23 cfs, and this reduction in Virgin River flow would have adverse effects on riparian areas along the Virgin River.

**BLM Comment 898:**

*(Section 5.3.9.4.5, Page 5-355)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 899:**

*(Section 5.3.9.5.1, Page 5-355)*

*This is an inadequate analysis. Need more discussion on impacts to riparian resources from the Proposed Action ... there is basically none here. How was the conclusion reached that unavoidable adverse effects on wetlands from the Proposed Action (construction and operation/maintenance) would not be significant?*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 900:**

*(Section 5.3.9.5.4, Page 5-355)*

*There are no “transmission line alternatives” ... construction and operation of transmission lines is built into each of the separate alternatives. Thus, merge the conclusion(s) on unavoidable and adverse effects from the transmission lines (construction and operation/maintenance) into the other sub- sections on impacts by alternative.*

**UDWRe Response:**

UDWRe's view is that the organization of the section is appropriate.

**BLM Comment 901:**

*(Section 5.3.9.5.5, Page 5-355)*

*With the merging of the existing Sec. 5.3.9.5.4 into previous sub-sections (since there are no distinct transmission line alternatives), this sub-section will now become 5.3.9.5.4.*



*We question this conclusion, that the No Lake Powell Water Alternative would have significant long-term unavoidable adverse indirect effects on riparian areas in the St. George area, and think it is not accurate. Please see Comment 893 on Section 5.3.9.2.7 regarding this issue (i.e., the assertion that not having residential watering would adversely affect groundwater recharge, and therefore riparian areas along the Virgin River).*

**UDWRe Response:**

**Please see the response to Comment 897.**

**BLM Comment 902:**

*(Multiple Sections, Multiple Pages)*

**General comment:**

- *“Mojave” is misspelled throughout this section. The only time where it is spelled “Mohave” is when referring to the County. When referring to the Mojave Desert, it is spelled with a “J” ... Please correct this.*
- *The discussion on vegetation is very confusing with the use of “ecological systems,” “associations,” and “alliances.” The BLM does not use this terminology. The BLM uses ecological zones (or regions), then simply refers to vegetation communities or vegetation types within those ecological zones. Please use that terminology in this entire discussion as it is a lot more straightforward, and much less confusing. All references to “ecological systems” would then be replaced with “vegetation communities” and references to “alliances” and “associations” would be deleted, and the veg. community names will likely need to be revised. (This same comment was made on the General Vegetation section.)*

**UDWRe Response:**

**The suggested edits from the first bullet of the above comment have been incorporated.**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 903:**

*(Table 5-94, Page 5-357)*

*Camissonia exilis, Status BLM  
Status should indicate BLM-GSENM*

*Technically this species is not on the BLM Special Status Species list anymore but, since the plant was found in the project area it needs to continue to be analyzed for potential impacts.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 904:**

*(Table 5-94, Page 5-357)*

*The footnote (in the “Status” column heading) is not defined ... please do so.*

**UDWRe Response:**

**The table has been revised to address the comment.**

**BLM Comment 905:**

*(Section 5.3.10, Tables)*

**General Comments:** *In these tables can more information be added to the land ownership column indicating BLM – GSENM, BLM – KFO, BLM AZ, or BLM – All? The location column in some cases makes it clear in others not so much. The same goes for trust lands in other tables in this section.*

*Having the VRM section first in Chapter 5 could help clarify the specific location column.*

**UDWRe Response:**

**The tables have not been revised to add more information to land ownership.**

**BLM Comment 906:**

*(Table 5-94, Page 5-357)*

*In these tables can more information be added to the land ownership column indicating BLM – GSENM, BLM – KFO, BLM AZ, or BLM – All? The location column in some cases makes it clear in others not so much. The same goes for trust lands in other tables in this section.*

*Having the VRM section first in Chapter 5 could help clarify the specific location column.*

**UDWRe Response:**

**Refer to the response to BLM Comment 905**

**BLM Comment 907:**

*(Table 5-94, Page 5-358)*

*The status of Morton wild buckwheat and Atwood wild buckwheat is listed as “N/A” ... what does this signify? If these species do not have any special status, why are they addressed in this section?*

**UDWRe Response:**

**These species were identified as potential species of concern at the time that the initial surveys were being planned.**

**BLM Comment 908:**

*(Table 5-94, Page 5-358)*

*Iris pariensis has been taken off the BLM sensitive list  
Please see attached sensitive species list for updates*

**UDWRe Response:**

**Iris pariensis is listed as a sensitive species in the BLM RMP for the Kanab FO.**

**BLM Comment 909:**

*(Table 5-94, Page 5-359)*

*September 11 stickleaf is also a BLM AZ sensitive species ... please add this to the table.  
The status of Fickeisen is now “ESA endangered” so please update this table.  
The status of smooth penstemon is listed as “N/A” ... what does this signify? If this species does not have any special status, why is it addressed in this section?)*

**UDWRe Response:**

**The status of September 11 stickleaf and Fickeisen plains cactus have been updated. Smooth penstemon was identified as potential species of concern at the time that the initial surveys were being planned.**

**BLM Comment 910:**

*(Table 5-94, Page 5-360)*

*Please check the spelling of the common name for Psorothamnus thompsoniae var. whitingii (should it be “Whiting’s indigo bush”?).  
The status of Gierisch globemallow is now “ESA endangered” so please update this table.  
Three hearts is not a BLM AZ sensitive species, so please delete this species from the table.*

**UDWRe Response:**

**The spelling of Whiting’s indigo bush has been corrected and the status of Gierisch globemallow has been updated. Three hearts has been deleted from the table.**

**BLM Comment 911:**

*(Table 5-94, Page 5-359)*

*The status of smooth penstemon is listed as “N/A” ... what does this signify? If this species does not have any special status, why is it addressed in this section?*

**UDWRe Response:**

**This species was identified as a potential species of concern at the time that the initial surveys were being planned.**

**BLM Comment 912:**

*(Section 5.3.10.1.2.1, Page 5-362)*

*5th line after Figure 5-136: Delete “the” before “Coyote Valley (do not use “the” when using proper names).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 913:**

(Section 5.3.10.1.2.1, Pages 5-363 and 5-364)

**Survey Results**

- *1st three paragraphs after Table 5-95: This discussion is VERY confusing ... please rewrite all of this simply referring to the plant communities in which this species occurs.*
- *3rd line of 2nd full paragraph on page 5-364: Replace “Colorado Plateau Gypsum Badlands Ecological System” with “Colorado Plateau Ecological Region.”*

**UDWRe Response:**

**UDWRe’s view is that the text referenced in the first bullet is appropriate as written. The suggested edit from the second bullet of the above comment has been incorporated.**

**BLM Comment 914:**

(Section 5.3.10.1.2.1, Page 5-365)

**Discussion**

- *1st paragraph of “Discussion” section: This discussion is VERY confusing ... please rewrite all of this simply referring to the plant communities in which this species occurs.*

**UDWRe Response:**

**UDWRe’s view is that the text referenced in the first bullet is appropriate as written.**

**BLM Comment 915:**

(Section 5.3.10.1.2.2, Pages 5-367 to 5-369)

**Survey Results**

- *1st two paragraphs after Table 5-96: This discussion is VERY confusing ... please rewrite all of this simply referring to the plant communities in which this species occurs.*

**Discussion**

- *2nd line of 1st paragraph (page 5-368): Replace semi- colon with comma after “Arizona.”*
- *Delete 2nd sentence in 1st paragraph (page 5-368).*
- *7th line of 1st paragraph (page 5-368): Insert “Utah” before “BLM sensitive” and add that this species is not a special status species in Arizona (i.e., it is not an Arizona BLM sensitive species).*
- *1st sentence in 1st paragraph after Figure 5-138: Replace listed ecological systems with vegetation communities.*

**UDWRe Response:**

**UDWRe’s view is that the text referenced in the first bullet is appropriate as written.**

**The suggested edits from the second, third, and fourth bullet of the above comment have been incorporated.**

**The document was organized and written in accordance with FERC guidance**

**BLM Comment 916:**

(Section 5.3.10.1.2.3, Page 5-371)

**Survey Results**

- ***1st paragraph after Table 5-97:*** Delete this paragraph or replace with vegetation community information.

**UDWRe Response:**

**UDWRe's view is that the text referenced in the first bullet is appropriate as written.**

**BLM Comment 917:**

(Section 5.3.10.1.2.3, Pages 5-372 and 5-373)

**Discussion**

- ***1st paragraph:*** Add "This species is not a BLM sensitive species." to the end of this paragraph.
- ***Last sentence in section (page 5-373):*** Where did this recommendation on closing project roads to the public come from? The reality is that this would never be successful, and could be more impacting on the landscape if the roads occur in open terrain with sparse vegetation (because vehicles would simply drive around barricades). Recommend deleting this statement.

**UDWRe Response:**

**The requested sentence has been added and the statement regarding the closure of project roads has been deleted.**

**BLM Comment 918:**

(Section 5.3.10.1.2.4, Page 5-374)

**Natural History**

- ***5th line on page:*** Don't use contractions ... use "does not" vs. "doesn't."
- ***Last sentence in section:*** Is this still accurate for the status of *Eriogonum corymbosum* var. *nilesii*, or is this one of the species that has recently been ESA listed?

**UDWRe Response:**

**The use of a contraction has been corrected. *Eriogonum corymbosum* var. *nilesii* is no longer a candidate for listing and does not currently have any other federal status; the sentence indicating that the species is a candidate for listing has been deleted.**

**BLM Comment 919:**

(Section 5.3.10.1.2.3, Page 5-375)

**Survey Results**

- ***1st paragraph after Table 5-98:*** Delete this paragraph (all except last 2 sentences) or replace with vegetation community information.

**Discussion**

- ***1st paragraph, 4th line:*** Delete "the" before "GCNRA" ... do not use "the" with proper names.

- **5th line of 1st paragraph:** The claim that “all other individuals were encountered on BLM ... land” is inconsistent with Table 5-98. That table shows NONE located on BLM land. Which is it? Please correct this inconsistency.
- **Lines 6-9 of 1st paragraph:** Delete entire sentence. Following text on plant assemblages in which this species was found is more than sufficient information. Then move reference to Figure 5-142 to the following sentence.

**UDWRe Response:**

UDWRe’s view is that the text referenced in the first bullet is appropriate as written. The word “the” was removed from its use in combination with proper names such as GCNRA. The text was revised to indicate that no individuals were found on BLM land. The requested sentence was deleted.

**BLM Comment 920:**

(Section 5.3.10.1.2.5, Page 5-377)

**Natural History**

- **Last line of 1st paragraph and 5th line of 2nd paragraph:** There is no “ANPS 2001” listed in the references in Sec. 5.3.10.6. Please add it to that section.

**UDWRe Response:**

This citation has been corrected to read “ARPC 2001”.

**BLM Comment 921:**

(Section 5.3.10.1.2.5, Page 5-378)

**Survey Results**

- **1st paragraph after Table 5-99:** Replace ecological systems text with vegetation communities information.

**UDWRe Response:**

UDWRe’s view is that the text is appropriate as written.

**BLM Comment 922:**

(Section 5.3.10.1.2.5, Page 5-379)

**Discussion**

- **2nd sentence of 1st paragraph:** Delete.
- **5th/6th and last lines of 2nd paragraph:** There is no “ANPS 2001” listed in the references in Sec. 5.3.10.6. Please add it to that section.
- **1st line of 5th paragraph:** Replace “subjected to” with “available for” (this is the correct terminology).

**UDWRe Response:**

The requested sentence has been deleted. The citation for “ANPS 2001” has been corrected to read “ARPC 2001”. The words “subjected to” have been replaced with “available for”.

**BLM Comment 923:**

*(Section 5.3.10.1.2.6, Page 5-381)*

**Natural History**

- **3rd line of 2nd paragraph:** Add space between “in” and “2001.”

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 924:**

*(Section 5.3.10.1.2.6, Page 5-382)*

**Survey Results**

- **2nd paragraph of section:** Replace ecological systems text with vegetation communities information.

**UDWRe Response:**

The document was organized and written in accordance with FERC guidance.

**BLM Comment 925:**

*(Section 5.3.10.1.2.6, Page 5-383)*

**Discussion**

- **1st sentence of 1st paragraph:** Delete end of sentence (the part beginning with “and entirely within ...”).
- **Line 15 of 2nd paragraph:** Per Table 5-94, this is not a special status species (the status there is listed as “N/A”).

**UDWRe Response:**

The text has been revised to address the coment.

**BLM Comment 926:**

*(Section 5.3.10.1.2.6, Page 5-384)*

**Discussion**

- **1st complete paragraph on page, 5th line:** Insert “- Paiute” after “Kaibab”.
- **1st complete paragraph on page, 6th/7th line:** There is no “Austin et al. 200” listed in the references in Sec.5.3.10.6. Please add it to that section.

**UDWRe Response:**

The suggested edit from the first bullet of the above comment has been incorporated.



**BLM Comment 927:**

*(Section 5.3.10.1.2.6, Page 5-385)*

**Survey Results**

- **2nd paragraph of section:** Replace ecological systems text with vegetation communities information.
- **2nd sentence of 1st paragraph:** Delete.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 928:**

*(Section 5.3.10.1.2.7, Page 5-385)*

*Because positive confirmation of the variety is dependent upon key floral features, and none of the individuals encountered during the survey were in flower or fruit, a positive identification was not possible.*

*A survey should be done for this species beginning in April as suggested.*

**UDWRe Response:**

**Surveys would be performed prior to any construction activities.**

**BLM Comment 929:**

*(Section 5.3.10.1.2.8, Page 5-387)*

**Natural History**

- **2nd paragraph:** Middle part of this paragraph is EXACTLY how the information on associated plant communities should be presented (vs. the confusing ecological systems/alliances/associations language in most other sections). Please use this sort of language throughout Section 5.3.10.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 930:**

*(Section 5.3.10.1.2.8, Page 5-388)*

**Survey Results**

- **1st paragraph, 7th line:** Insert “-Paiute” after “Kaibab”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 931:**

*(Section 5.3.10.1.2.8, Page 5-389)*

**Survey Results**

- ***1st paragraph after Table 5-101:*** Replace ecological systems text with vegetation communities information.
- ***1st sentences of 2nd and 3rd paragraphs:*** Repetitive ... merge these two paragraphs and delete repetitive text.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The second and third paragraphs were revised to address the comment.**

**BLM Comment 932:**

*(Section 5.3.10.1.2.8, Page 5-390)*

**Survey Results**

- ***Last paragraph in section:*** Delete 2nd sentence – this is inconsistent with our long-term monitoring data (that goes all the way back to 1987) located in the same area as referred to here. This long-term monitoring involves a plot near the proposed LPP, made up of two subplots – one of these two subplots is open to grazing, while the other subplot is fenced off from livestock grazing. The data shows that these two populations of *Pediocactus sileri* are almost identical. The overwhelming majority of mortality in these subplots is due to rodents eating the roots and killing the plants. In fact, this is consistent with monitoring data from all our *Pediocactus sileri* plots on the Arizona Strip.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 933:**

*(Section 5.3.10.1.2.8, Page 5-390)*

**Discussion**

- ***1st paragraph:*** Replace ecological systems text (middle of paragraph) with vegetation communities information.
- ***2nd paragraph, 4th/5th lines:*** Delete “within the microhabitats of the Gypsum Badlands Ecological System” and replace with “for the species.”
- ***2nd paragraph, 9th/10th lines:*** Insert information from our long-term monitoring data (that goes all the way back to 1987). This monitoring involves a plot near the proposed LPP, made up of two subplots – one of these two subplots is open to grazing, while the other subplot is fenced off from livestock grazing. The data shows that these two populations of *Pediocactus sileri* are almost identical. The overwhelming majority of mortality in these subplots is due to rodents eating the roots and killing the plants. In fact, this is consistent with monitoring data from all our *Pediocactus sileri* plots on the Arizona Strip.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The suggested edits from the second and third bullets of the above comment has been incorporated.**

**BLM Comment 934:**

*(Section 5.3.10.1.2.8, Page 5-392)*

**Discussion**

- **3rd through 7th lines on page:** Insert information from our long-term monitoring data (that goes all the way back to 1987). This monitoring involves a plot near the proposed LPP, made up of two subplots – one of these two subplots is open to grazing, while the other subplot is fenced off from livestock grazing. The data shows that these two populations of *Pediocactus sileri* are almost identical. The overwhelming majority of mortality in these subplots is due to rodents eating the roots and killing the plants. In fact, this is consistent with monitoring data from all our *Pediocactus sileri* plots on the Arizona Strip.
- **7th line of 1st complete paragraph on page:** Replace “could” with “should.”

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 935:**

*(Section 5.3.10.1.2.9, Page 5-393)*

**Survey Results**

- **2nd line of 1st paragraph:** Correct name is “Johnson Wash” (not “Johnson’s Wash”).
- **2nd paragraph of section:** Replace ecological systems text with vegetation communities information.

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment has been incorporated.**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 936:**

*(Section 5.3.10.1.2.9, Page 5-394)*

**Survey Results**

- **2nd line after Table 5-102:** Replace “seven ecological systems” with “project area.”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 937:**

*(Section 5.3.10.1.2.9, Page 5-395)*

**Discussion**

- **1st paragraph, 4th/5th lines:** Delete “was most abundant ... across ecological systems it”.

- **1st paragraph, 6th/-9th lines:** Delete “most frequently observed within ... Gypsum Badlands Ecological System; and was”.
- **3rd paragraph, 10th line:** Replace “will” with “would.”
- **3rd paragraph, 11th line:** Replace “occurring within affected areas of the survey area” with “due to project activities.”
- **4th paragraph, 4th line:** Should be “affected areas” (not “effected areas”).
- **4th paragraph, 5th line:** Replace “could” with “should.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 938:**

*(Section 5.3.10.1.2.10, Page 5-395)*

*Per Table 5-94, this is not a special status species (the status there is listed as “N/A”). If it is does not have a special status, why is it addressed in this section (5.3.10 – Special Status Plants)?*

**UDWRe Response:**

**The discussion has been removed from the text.**

**BLM Comment 939:**

*(Section 5.3.10.1.2.10, Page 5-397)*

**Survey Results**

- **1st paragraph, lines 1-2 and 4:** There is repetitive information in the first two sentences of this section. Please rewrite the 4th line of this paragraph to read “Three of the location at which it was encountered were on BLM lands, one was” (i.e., delete “*P. laevis* was encountered at five locations” – this is the repetitive text).
- **2nd paragraph, line 3:** Replace “Ecological System” with “vegetation community”.

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment has been incorporated.**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 940:**

*(Section 5.3.10.1.2.10, Page 5-398)*

**Discussion**

- **1st paragraph:** Delete sentence beginning with “Nearly half of the individual plants were found ...”.
- **1st paragraph, 5th/6th lines and 2nd paragraph, 1st/2nd lines:** This text is repetitive, so delete the first sentence of the 2nd paragraph.
- **3rd paragraph:**  
☐ Rewrite to read: “*Penstemon laevis* was often found in areas where cattle grazing occurs; cattle appear to graze directly on the plant. Signs of herbivory were often present, with foliage and inflorescences partially to moderately grazed. Although *P.*

*laevis* may be subject to grazing by other herbivores, habitat use observed by the survey suggests that much of this is the result of cattle grazing. Although invasive weeds were commonly found ... project effects on the species would most likely result from the direct loss of individuals within the survey area.”

☐ Above edits are necessary because the conclusion about impacts from livestock grazing cannot be made without long-term monitoring data. It is also quite clear that the author of this section has a definite bias against livestock grazing ... however, we are supposed to present an unbiased analysis.

• **4th paragraph, lines 3-5:** Delete “and would provide the species a potential opportunity ... suffering as a result of cattle grazing.” Again, the author’s anti-grazing bias is abundantly obvious in statements such as this. It is not appropriate in an analysis such as this.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 941:**

(Section 5.3.10.1.2.11, Page 5-400)

**Survey Results**

• **1st paragraph after Table 5-104:** Replace ecological systems text with vegetation communities information.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 942:**

(Section 5.3.10.1.2.11, Page 5-400)

**Discussion**

• **1st paragraph, lines 4-8:** Delete sentence beginning with “*P. mammalariensis* was found growing most often ...”.

• **1st paragraph, line 11:** Replace “Note,” with “Although”.

• **1st paragraph, line 12:** Delete “the” before “GCNRA” (it is not appropriate to use “the” with a proper name).

• **3rd paragraph:** Delete entire paragraph – author needs to suppress his/her obvious anti-grazing bias.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 943:**

(Section 5.3.10.1.2.12, Page 5-402)

**Natural History**

• **1st paragraph, last 2 lines:** There is no “Welsh et al. 2003” included in the references list ... should this be “Welse et al. 2008”?

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 944:**

*(Section 5.3.10.1.2.12, Page 5-403)*

**Survey Results**

• *1st paragraph, 1st sentence: What is proposed to done to Eightmile Gap Road? This is not discussed (or even mentioned) in Chapter 3, but to do an accurate impacts analysis we need to know everything that is proposed.*

**UDWRe Response:**

**Improvements would be made from where it transitions to a two-track trail to the LPP Project alignment. The Improvements would be temporary unless decided otherwise after discussions and agreements with BLM and other stakeholders. To describe every activity such as this in Chapter 3 would have been infeasible.**

**BLM Comment 945:**

*(Section 5.3.10.1.2.12, Page 5-404)*

**Survey Results**

• *1st paragraph after Table 5-105: Replace ecological systems text with vegetation communities information. Suggest rewriting this paragraph to read “Phacelia pulchella var. atwoodii was found within the Colorado Plateau Ecological Region, in plant communities dominated by native species, most often Artemisia tridentata, ssp. vaseyana, Eriogonum corymbosum, Gutierrezia sarothrae, and/or Juniperus osteosperma. Individuals were found at elevations ranging from 4,980 feet (1,518 meters) to 5,620 feet (1,713 meters).*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 946:**

*(Section 5.3.10.1.2.12, Page 5-405)*

**Discussion**

• *1st paragraph: Much of the text in this paragraph is already discussed in the “Survey Results” section ... why does it need to be repeated here also. Suggest not repeating it.*  
• *1st paragraph, lines 14-15: Please delete “(particularly by livestock grazing),”.*

**UDWRe Response:**

**Your comment has been noted.**

**The suggested edit from the second bullet of the above comment has been incorporated.**

**BLM Comment 947:**

*(Section 5.3.10.1.2.12, Page 5-407)*

**Discussion**

- ***1st paragraph, line 13:*** Delete “natural” – since this plant was found along Eightmile Gap Road (which has had plenty of disturbance from human activities). The plant is tolerant of disturbance in general, not just “natural” disturbance.
- ***1st paragraph, line 17:*** Please delete “negative” – we should just state that there could be an impact.
- ***2nd paragraph, line 17:*** Please replace “may” with “should.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 948:**

*(Section 5.3.10.1.3.1, Page 5-408)*

*Sub-section heading should be “Weed Occurrence by Vegetation Community and Anthropogenic Lands”.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 949:**

*(Section 5.3.10.1.3.2, Page 5-408)*

*Sub-section heading should be “Vegetation Communities”.*

*Replace ecological systems text with vegetation communities information.*

*Please correct spelling of “Mojave”.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The suggested edit from the third paragraph of the above comment has been incorporated.**

**BLM Comment 950:**

*(Section 5.3.10.1.3.3, Page 5-408)*

***1st paragraph, 1st sentence:*** Should read “In addition to classification of plant communities, the survey team classified ...”.

***1st paragraph, line 6:*** What constitutes “Ruderal Vegetation”? Simply saying its areas where the natural vegetation cover has been disturbed is too vague.

**UDWRe Response:**



**The suggested edit from the first paragraph of the above comment has been incorporated.**

**The definition of ruderal is a plant that grows in rubbish, very poor, or disturbed soil.**

**BLM Comment 951:**

*(Section 5.3.10.1.3.3, Page 5-408)*

*Concentration of noxious & invasive weeds are scattered anywhere and a seed source or a plant can germinated anyplace at any-time, not just close to human population centers.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 952:**

*(Section 5.3.10.1.3.5, Page 5-410)*

*Line 6: Replace “two associations” with “plant communities.”*

*Line 6: Delete “a special status species” (per Table 5-94, where status is listed as “N/A”).*

*Line 6: Replace “alliance” with “plant community.”*

**UDWRe Response:**

**The suggested second edit in the comment has been incorporated.**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 953:**

*(Section 5.3.10.2.1, Pages 5-410 and 5-411)*

*Separate the discussion into two distinct sub-sections, one for Special Status Species, the other for Noxious Weeds and Invasive Species. Thus, the first paragraph of 5.3.10.2.1 would become 5.3.10.2.1.1 Special Status Species, and the second paragraph would become 5.3.10.2.1.2 Noxious Weeds and Invasive Species.*

*Lines 3-4 of the new Sec. 5.3.10.2.1.1 Special Status Species: Rewrite to read “plants on federal or state plant lists. One of the affected plants is federally listed as endangered. The Proposed Action construction ...”.*

*General comment/question: Is there any designated critical habitat that the project would go through? Should state one way or the other here – USFWS will require a discussion on any designated critical habitat in the action area.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**The Proposed Action would not pass through any designated critical habitat related to vegetation species.**

**BLM Comment 954:**

*(Section 5.3.10.2.1, Page 5-411)*

**4th line on page (now part of the new Sec. 5.3.10.2.1.2 Noxious Weeds and Invasive Species):**  
Replace “would” with “should”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 955:**

*(Section 5.3.10.2.2, Page 5-411)*

*Separate the discussion into two distinct sub-sections, one for Special Status Species, the other for Noxious Weeds and Invasive Species. Thus, the first paragraph of 5.3.10.2.2 would become 5.3.10.2.2.1 Special Status Species, and the second paragraph would become 5.3.10.2.2.2 Noxious Weeds and Invasive Species.*

**Line 4 of the new Sec. 5.3.10.2.2.1 Special Status Species:** Rewrite to read “federally listed threatened species. The Existing Highway”.

**Last 3 sentences of the new Sec. 5.3.10.2.2.1 Special Status Species:** Wouldn't the penstock for this alternative (Existing Highway) be located within the highway right-of-way, an area where disturbance has (and does) already occur? For example, mowing of vegetation along the highway occurs, so equipment disturbs the ground surface. This existing disturbance should be acknowledged here (i.e., it is not “virgin” ground where the pipeline would be installed).

**General comment:** Several of the species mentioned here (*Eriogonum thompsoniae* var. *atwoodii*, *Eriogonum mortanianum*, and *Penstemon laevis*) are listed in Table 5-94 as having a status of “N/A”. Doesn't that mean they do not have any particular special status, in which case they should not even be included in this discussion?

**General comment/question:** Is there any designated critical habitat that the project would go through? Should state one way or the other here – USFWS will require a discussion on any designated critical habitat in the action area.

**2nd line of the new Sec. 5.3.10.2.2.2 Noxious Weeds and Invasive Species:** Delete “human”.

**9th line of the new Sec. 5.3.10.2.2.2 Noxious Weeds and Invasive Species:** Replace “would” with “should”.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The suggested edits from the second, third, sixth and seventh paragraphs of the above comment have been incorporated.**

**The Existing Highway Alternative would not pass through any designated critical habitat related to vegetation species.**

**BLM Comment 956:**

*(Section 5.3.10.2.3, Page 5-411)*

*Separate the discussion into two distinct sub-sections, one for Special Status Species, the other for Noxious Weeds and Invasive Species. Thus, the first sentence of 5.3.10.2.3 would become **5.3.10.2.3.1 Special Status Species**, and the second sentence would become **5.3.10.2.3.2 Noxious Weeds and Invasive Species** (and the references to the Proposed Action sections that impacts would be the same as will also need to be revised/updated).*

**Lines 3-4 of the new Sec. 5.3.10.2.1.1 Special Status Species:** Rewrite to read “plants on federal or state plant lists. One of the affected plants is federally listed as endangered. The Proposed Action construction ...”.

**General comment/question:** Is there any designated critical habitat that the project would go through? Should state one way or the other here – USFWS will require a discussion on any designated critical habitat in the action area.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The text has been revised to address the comment.**

**The Southeast Corner Alternative would not pass through any designated critical habitat related to vegetation species.**

**BLM Comment 957:**

*(Section 5.3.10.2.4, Page 5-412)*

*Separate the discussion into two distinct sub-sections, one for Special Status Species, the other for Noxious Weeds and Invasive Species. Thus, the first two sentences of 5.3.10.2.4 would become **5.3.10.2.4.1 Special Status Species**, and the rest would become **5.3.10.2.4.2 Noxious Weeds and Invasive Species**.*

**New Sec. 5.3.10.2.4.2 Noxious Weeds and Invasive Species write-up:** This assessment of impacts is inaccurate. Eliminating outdoor watering of landscapes would not result in the spread of invasive species. Please rewrite this section to read “The No Lake Powell Water Alternative would have no direct or indirect effects on the spread or occurrence of invasive and noxious weed species. No construction activities would occur across most of the LPP Project area, with no associated new disturbance to potentially promote the spread of these species.” (Note: If new facilities are proposed in the St. George/Hurricane area under this alternative, BMPs to prevent the spread of invasive species would be implemented, which would minimize their spread.)

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 958:**

*(Section 5.3.10.2.5, Page 5-412)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 959:**

*(Section 5.3.10.3, Page 5-412)*

**1st paragraph, 6th line:** *Delete “avoid or”.*

**1st paragraph, 10th/11th lines:**

- *Insert “and” after “sensitive habitats”.*
- *Delete “and provide for the restoration of disturbed natural communities”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 960:**

*(Section 5.3.10.3.1, Pages 5-412 to 5-413)*

*Many of these BMPs, while good ones, have nothing to do with Special Status Vegetation Species and Noxious Weeds, the section they’ve been included in.*

**UDWRe Response:**

**Two BMPs were not related to vegetation have been deleted from the list.**

**BLM Comment 961:**

*(Section 5.3.10.3.1, Pages 5-412 to 5-418)*

**General Comment:** *Please add a blank line after each separate BMP ... it makes the list much easier to read.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 962:**

*(Section 5.3.10.3.1, Page 5-413)*

**BMP-G4:** *“Crew camps.” If crew camps are going to be established for this project, they need to be identified and included in the proposed actions and effects analysis.*

**UDWRe Response:**

Crew camps are not anticipated to be established for the project. Crew camps were included on the list for completeness.

**BLM Comment 963:**

*(Section 5.3.10.3.1, Page 5-413)*

**BMP-G10:** Add to the end of this BMP “Equipment and vehicles would only be washed in designated locations where material would be captured/contained and removed off-site to an approved disposal area so that invasive plant material would not be spread.” (Vehicles and equipment should only be washed in self-contained areas.)

**BMP-G11:** Replace “or immediately adjacent to” with “¼ mile of”.

**BMP-G12, 4th line:** What is a “settling area”? These mineral and silt materials should be disposed of off-site, at an approved location. Also, replace “may” with “would” (line 5 of BMP).

**BMP-G13 and BMP-14:** How are these two BMPs relevant to vegetation? Delete both.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 964:**

*(Section 5.3.10.3.1, Page 5-413)*

**“BMP-G15:** Vegetation slash not containing noxious and invasive or special status plants would be disposed of by removal to an agreed upon location. In upland areas, vegetation could be disposed of by: piling and burning, burying, windrowing at the base of fill slopes, and chipping and scattering.”

The BLM would not permit burying vegetation slash. Please delete reference to burying vegetation slash.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 965:**

*(Section 5.3.10.3.1, Page 5-413)*

**BMP-G15:** This needs to be looked at from a VRM perspective. There may be a preference to when, where, and how slash be dealt with.

**UDWRe Response:**

Your comment has been noted.

**BLM Comment 966:**

*(Section 5.3.10.3.2, Page 5-414)*

**BMP-R/R1:** “The soil surface of a disturbed area would be re- vegetated with a mix of species that is best suited to meet the erosion control objective, with consideration for range, wildlife, timber, or fuels management objectives.

On GSENM, the mix of species should be ones best suited to meet the objective noted in our MMP. GSENM’s vegetation objective is to “achieve a natural range of native plant associations” (pg 22 of MMP).

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 967:**

(Section 5.3.10.3.2, Page 5-414)

**BMP-R/R2:** - is not appropriate for use on GSENM.

**UDWRe Response:**

**Your comment is noted.**

**BLM Comment 968:**

(Section 5.3.10.3.2, Page 5-414)

**3rd line of section:** Delete “and animals” (this is the vegetation section, not wildlife section).

**BMP-R/R1:** Delete “timber” (none present within the LPP project area alignments). And delete the second sentence of this BMP (use of native seed/plants is not a requirement on BLM-AZ Strip lands).

**BMP-R/R2, 2nd line:** Replace “sterile” with “approved”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 969:**

(Section 5.3.10.3.3, Pages 5-414 and 5-415)

Delete this entire section ... this is the special status plant section, not the riparian resources section. Consider moving this text to Section 5.3.9.

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 970:**

(Section 5.3.10.3.4, Page 5-415)

**1st 3 sentences of section:** Delete – this text was already stated earlier in this Special Status Plant Species section, so not necessary to repeat it here.

***BMP-SS1:** Rewrite second line to read “occupied by federally listed species and other special status plant species.”*

**UDWRe Response:**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**BLM Comment 971:**

*(Section 5.3.10.3.4, Page 5-416)*

***BMP-SS5:** Rewrite this BMP to read “Protect newly seeded areas from livestock grazing for at least two growing seasons.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 972:**

*(Section 5.3.10.3.5, General)*

*The ROW grant will require that the grantee will only use active ingredients from the BLM approved herbicide/adjuvant list for BLM lands.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 973:**

*(Section 5.3.10.3.5, Page 5-416)*

***5th line:** Delete “and animal” (this is the vegetation section, not the wildlife section).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 974:**

*(Section 5.3.10.3.5.1, Page 5-416)*

***BMP-IS2:** “Seeds of native species should be used whenever possible. Efforts would be made as to not plant species on any associated agency’s invasive plant list.”  
Native species should be exclusively used on GSENM (not whenever possible) per the GSENM MP and it should be insured that invasive species are not planted.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 975:**



(Section 5.3.10.3.5.1, Page 5-416)

**BMP-IS4:** Add how long this post-construction and post-decommissioning monitoring would occur.

**UDWRe Response:**

**5 years.**

**BLM Comment 976:**

(Section 5.3.10.3.5.3, Page 5-417)

**BMP-IS10:** To the extent possible, materials such as fill, loam, mulch, hay, rip-rap, and gravel would not be brought into project areas from sites where invasive plants are known to occur. If the absence of noxious and invasive plant parts in these materials cannot be guaranteed, recent work sites would be monitored for the emergence of invasive plants.

This needs to say that these products will be purchased from provider that can show that the products are certified weed free.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 977:**

(Section 5.3.10.3.5.3, Page 5-417)

**BMP-IS9:** Need to add that all equipment/vehicles would be cleaned (in a containment area) to prevent the spread of noxious weeds and invasive species. Thus, combine this BMP with **BMP-IS12**.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 978:**

(Section 5.3.10.3.5.4, Page 5-417)

**“Brush Piles:** Plant material from most invasive plants would be piled on site to dry out. Brush piles are recommended for woody shrubs, trees, and vines.” Brush piles can create visual effects. Include in proposed action and effects analysis.

Additional steps to prevent adverse effects of these should be included.

**UDWRe Response:**

**Refer to the revised mitigation measure in Section 5.3.16.3.1.1.**

**BLM Comment 979:**

(Section 5.3.10.3.5.4, Page 5-417)

*Invasive herbicides. Must be carried out by licensed applicator with permit/license and must be BLM approved to apply herbicides and mandatory to follow the labels.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 980:**

*(Section 5.3.10.3.5.4, Pages 5-417 and 5-418)*

**BMP-IS16:** *Only herbicides with low toxicity to wildlife and wild horses and burros would be used.*

*This is pretty broad; again please state that applicators have to follow the label regardless of the toxicity level. The label would say if livestock needs to be removed for a particular amount of time after spraying.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 981:**

*(Section 5.3.10.3.5.4, Page 5-418)*

**BMP-IS18:** *Appropriate herbicide-free buffer zones would be used for herbicides not labeled for aquatic use, based on BLM/Forest Service risk assessment guidance, which has minimum widths of 100 feet for aerial applications, 25 feet for applications dispersed by vehicle, and 10 feet for hand-spray applications.*

*This needs to say, "... herbicide labels will be followed with recommended buffers (as listed). If an herbicide needs to be used near an aquatic area, an aquatic approved herbicide would be used. If something like Tordon is used and it is hand sprayed within 10 feet of a body of water the applicator is not following the label as this herbicide is not approved for aquatic use and should not be used within 25 feet of a body of water.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 982:**

*(Section 5.3.10.4.1, Page 5-418)*

**3rd paragraph:** *This text is repetitive with text in the previous paragraph, so merge the two paragraphs.*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate.**

**BLM Comment 983:**

*(Section 5.3.10.4.1, Page 5-419)*

*4th line of 1st complete paragraph on page: OHV acronym has already been defined, so don't need to do so again here.*

*2nd complete paragraph on page: This discussion on Colorado River flows is not relevant to the special status species/invasive species discussion, so delete.*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**BLM Comment 984:**

*(Section 5.3.10.4.5, Page 5-419)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 985:**

*(Section 5.3.10.5.1, Page 5-420)*

*7th line on page: Replace “ESA” with “federally”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 986:**

*(Section 5.3.10.5.2, Page 5-420)*

*5th through 9th lines: Delete the sentence beginning “Long segments of cryptobiotic ...”. Need to acknowledge that the alignment proposed under this alternative would be located within the highway right-of-way, an area where disturbance has (and does) already occur. And the sentence beginning “The Existing Highway Alternative would have significant unavoidable adverse effects” should be revised to say “The Existing Highway Alternative would have unavoidable adverse effects ...”. Isn't transplanting proposed? How successful do we think that would be?*

*9th line: Replace “ESA” with “federally”.*

**UDWRe Response:**

**The suggested edit from the second paragraph of the above comment has been incorporated.**

**BLM Comment 987:**

*(Section 5.3.10.5.5, Page 5-420)*

*NEW SUB-SECTION: There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 988:**

*(Section 5.3.10.6, Pages 5-420 to 5-431)*

**General Comments:**

- *Many of the references included in this section are not cited in the text. Please delete those not cited in the discussion.*
- *The BLM references are not portrayed accurately – they should be presented as “Bureau of Land Management (BLM)”, and then they would be after the “Buchmann” reference. The BLM references are also not presented in chronological order in this list.*
- *Spacing needs to be corrected – there should be blank lines both before and after each listed reference.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 989:**

*(Section 5.3.11, Multiple)*

*“Mojave” is misspelled throughout this section. The only time where it is spelled “Mohave” is when referring to the County. When referring to the Mojave Desert (ecosystems and the desert tortoise), it is spelled with a “J” ...Please correct this.*

**UDWRe Response:**

**The spelling has been corrected as appropriate throughout Chapter 5 and the final study report.**

**BLM Comment 990:**

*(Section 5.3.11, General)*

*The BLM has obligations to analyze impacts to migratory birds. Recommend that a migratory bird analysis be completed in more detail than just discussing APLIC and impacts to raptors. Regulatory authorities exist under Migratory Bird Treaty Act and Bald and Golden Eagle Act. Migratory birds with the exception of those listed under ESA or identified as BLM Sensitive are not considered “Special Status Species” so suggest pulling out migratory birds from Section 5.3.12 except for those listed under ESA or BLM Sensitive. Birds are included in Table 5-108-110*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 991:**

*(Section 5.3.11.1, Page 5-432)*

*1st line: Insert “and” before “disturbance”.*

*2nd line: Delete “and livestock grazing”.*

*6th line: Insert “LPP” before “alternative corridors”.*

*7th line (2 places): Should be “rights-of-way” (not “right-of- ways”).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 992:**

*(Section 5.3.11.1.1, Page 5-432)*

*1st/2nd lines, 2nd paragraph: Delete “‘ecological systems’ that are equivalent to definable”. Use of the “ecological systems” terminology is very confusing, and the BLM does not use this terminology. We use ecological zones (or regions), then simply refer to vegetation communities or vegetation types within those ecological zones. Please use that terminology in this entire wildlife section as it is a lot more straightforward, and much less confusing. All references to “ecological systems” would then be replaced with “vegetation communities” and references to “alliances” and “associations” would be deleted.*

*2nd paragraph, last sentence: Add a discussion on Arizona Game and Fish Dept. and their “designations” of big game habitat.*

*5th line, 1st paragraph: Please rewrite to read “semi-arid environment (such as the LPP Project area) and may provide wildlife habitats ...”*

*2nd line, 4th paragraph: Insert “native surface” after “graded”.*

**UDWRe Response:**

**Vegetation land cover descriptions follow the National Vegetation Classification System used in the SWReGAP land cover descriptions – the landcover was mapped to the association level.**

**Arizona Game and Fish Department designations of big game habitat have been addressed in the final study report.**

**The suggested edits from the third and fourth paragraphs have been incorporated.**

**BLM Comment 993:**

*(Section 5.3.11.1.1.1, Page 5-435)*

*End of 2nd paragraph: Delete “(LSD 2010)” – don’t need to cite a reference here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 994:**

*(Section 5.3.11.1.1.1, Page 5-435)*

**Colorado Plateau Active and Stabilized Dune:** replace “ecological system” with “vegetation community.”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 995:**

*(Section 5.3.11.1.1.1, Pages 5-435 and 5-436)*

**Colorado Plateau Big Sagebrush Shrubland:**

- Replace “ecological system” with “vegetation community” – 2 places.
- Replace “SR 9” with “Highway 9” (5th line on p. 5-435).
- Capitalize “Trail” (1st line on p. 5-436).
- Please use the common name of “Mormon tea”, not “Nevada jointfir”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 996:**

*(Section 5.3.11.1.1.1, Page 5-436)*

**Colorado Plateau Grassland:** Please rewrite the last sentence to read “James’ galleta (*Pleuraphis jamesii*) is the most common plant species.”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 997:**

*(Section 5.3.11.1.1, Page 5-432)*

*In the Colorado Plateau Grassland paragraph the last sentence mentions that this has “generally been overgrazed”. This statement is not relevant so please remove it. It is not pertinent to this document.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 998:**

*(Section 5.3.11.1.1.1, Page 5-436)*

**Colorado Plateau Gypsum Badland:** Replace “SR 9” with “Highway 9” (5th line).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 999:**

*(Section 5.3.11.1.1.1, Page 5-436)*

**Colorado Plateau Juniper Savanna:** Delete “the” before “Cedar Mountain” (don’t use “the” when referring to a proper name).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1000:**

*(Section 5.3.11.1.1.1, Page 5-437)*

**Colorado Plateau Mixed Bedrock Canyon and Tableland:** Last sentence should read “Mormon tea was the most common plant species.” (Already gave the scientific name for this species, so don’t need to do so again.)

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1001:**

*(Section 5.3.11.1.1.1, Page 5-437)*

**Colorado Plateau Mixed Desert Scrub:** Replace “associations” with “species” on the last line of the section.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1002:**

*(Section 5.3.11.1.1.1, Page 5-437)*

**Colorado Plateau Mixed Low Sagebrush Shrubland:** Delete “the” before “Cedar Mountain” (don’t use “the” when referring to a proper name).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1003:**

*(Section 5.3.11.1.1.1, Page 5-437)*

**Colorado Plateau Pinyon-Juniper Woodland:**

- **1st line:** “pinyon” should not be capitalized here.
- **Last sentence:** should read “Little Utah juniper (*Juniperus osteosperma*) is the dominant species in this community.



**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1004:**

*(Section 5.3.11.1.1.1, Page 5-438)*

**Colorado Plateau Shrub Steppe:**

- **2nd line:** Replace “Region” with “LPP project area.”
- **3rd line:** Replace “these” with “which”.
- **5th line:** Should be “Johnson Wash” (not “Johnson’s Wash”).
- **7th line:** Beginning of line should read “north to Utah Highways 59 and 9.”
- **Last line:** Delete Latin name for snakeweed (already gave the scientific name for this species, so don’t need to do so again.)

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1005:**

*(Section 5.3.11.1.1.1, Page 5-432)*

**Colorado Plateau Volcanic Rock and Cinder Land:** Replace “association” with “species”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1006:**

*(Section 5.3.11.1.1.2, Page 5-438 to 5-440)*

“Mojave” is misspelled throughout this section. The only time where it is spelled “Mohave” is when referring to the County. When referring to the Mojave Desert (ecosystems and the desert tortoise), it is spelled with a “J” ... Please correct this.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1007:**

*(Section 5.3.11.1.1.2, Page 5-438 and 5-439)*

**Mojave Desert Active and Stabilized Dune:**

- **2nd line:** Replace “SR” with “State Highway”.
- **4th line:** Delete Latin name for Utah juniper (already gave the scientific name for this species, so don’t need to do so again).
- **6th line:** Delete Latin name for sand sage (already gave the scientific name for this species, so don’t need to do so again).
- **2nd line:** Replace “alliance” with “species”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1008:**

*(Section 5.3.11.1.1.2, Page 5-439)*

**Mojave Desert Blackbrush-Mormon Tea Shrubland:**

- *There should be no hyphen between “Mormon” and “tea”.*
- *Last line: Delete Latin name for blackbrush (already gave the scientific name for this species, so don’t need to do so again). Also, edit end of line to read “... blackbrush as the dominant species.”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1009:**

*(Section 5.3.11.1.1.2, Page 5-439)*

**Mojave Desert Creosotebush-White Bursage Desert Scrub:**

- *Last line: Edit to read “Creosotebush (*Larrea tridentata*) is the dominant species.” (Note the corrected spelling for “tridentata”).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1010:**

*(Section 5.3.11.1.1.2, Page 5-439)*

**Mojave Desert Gypsum Badland:**

- *Last sentence: Should read “... comprised of Mormon tea (*E. nevadensis* and *E. torreyana*).”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1011:**

*(Section 5.3.11.1.1.2, Page 5-439)*

**Mojave Desert Lower Montane Riparian Woodland and Shrubland:**

- *Last line: Delete Latin name for tamarisk (already gave the scientific name for this species, so don’t need to do so again).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1012:**

(Section 5.3.11.1.1.2, Page 5-439)

**Mojave Desert Mixed Desert Scrub:**

• **Last sentence:** Revise to read “The most common species in this plant community is broom.” (Is this really true???)

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1013:**

(Section 5.3.11.1.1.2, Page 5-439)

**Mojave Desert Shrub-Steppe:**

• **Last sentence:** Revise to read “Big galleta (*Pleuraphis rigida*) and **broom snakeweed** are the most common species.” (Is this really true about snakeweed???)

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1014:**

(Section 5.3.11.1.1.2, Page 5-440)

**Mojave Desert Volcanic Rock and Cinder Land:**

• **Last line:** Delete Latin names for blackbrush and creosote (already gave the scientific name for these species, so don’t need to do so again).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1015:**

(Section 5.3.11.1.1.2, Page 5-440)

**Mojave Desert Wash:**

• **Last line:** Delete Latin name for snakeweed (already gave the scientific name for this species, so don’t need to do so again).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1016:**

(Section 5.3.11.1.1.3, Page 5-440)

**3rd line:** Beginning of line should read “bighorn sheep and pronghorn, big game species that occur ...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1017:**

*(Section 5.3.11.1.1.3, Page 5-440)*

*Because of the high traffic related mortality mentioned, in 2013 UDOT, UDWR, AGFD, ADOT, GSENM and others collaborated to construct 12.5 miles of deer proof fencing along this major migration corridor. The fence is on both sides of the highway from mile posts (MP) MP36 west to MP48.6. Along this 12.5 mile stretch there are seven structures to accommodate deer migration at mp37, mp39.5, mp40.5, mp42.5, mp44, mp45.5, mp48.2 respectively. This has to be mentioned as this section will be a major consideration during construction activities. During migration times, any construction along this section would have major negative consequences to roughly 6000 migrating deer. This needs to be addressed without question.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1018:**

*(Section 5.3.11.1.1.3, Page 5-440)*

***1st paragraph:** Please note that a large deer fence has now been constructed on both sides of Highway 89 in the primary deer migration area (which is dramatically reducing deer- vehicle mortality from collisions. Please update this paragraph with that information.*

***2nd paragraph:***

- **1st line:** Delete “the” before “Coyote Valley” (not appropriate to use “the” in connection with a proper name).*
- **6th line:** Delete “the” before “Cedar Ridge” (not appropriate to use “the” in connection with a proper name).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1019:**

*(Section 5.3.11.1.1.3, Page 5-440)*

*Utah Division of Wildlife Resources acronym is UDWR not UDWLR. This is found throughout the document.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1020:**

*(Section 5.3.11.1.1.3, Page 5-440)*

*From the Cockcomb west along US89 until roughly the Paria movie set road, UDWR classifies as mule deer “Winter Substantial”. Many deer migrate through this route and winter on the south side of the highway. This should be looked at as a potential effect on wintering/migrating deer in the area and not ignored.*

**UDWRe Response:**

**This area shows as “Crucial Winter Range” in Figure 5-156.**

**BLM Comment 1021:**

*(Figure 5-126, Page 5-440)*

*Recommend that the map legend should correspond to wildlife habitats as discussed for each species in Section 5.3.11.1.1.3 (i.e. the write-up on page 5-433 for pronghorn states there is not crucial pronghorn seasonal range; only high value (Utah) and high quality (Arizona) but the map legend is labeled as crucial; big horn sheep should be labeled correctly as crucial winter and crucial year-long to show the seasonal use areas; same for mule deer crucial winter range)-seasonal range may be important to identify/describe as seasonal restrictions may differ based on habitat and seasonal value.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 1022:**

*(Figure 5-156, Page 5-441)*

*This map does not display the bighorn sheep habitat in Arizona, which is immediately adjacent to that in Utah. Please add it (the GIS layer would be available from the BLM Arizona Strip GIS Specialist, Bryan Hansen at 435-688-3212.*

*Map also does not show “Moderate Quality” pronghorn habitat in Arizona (and it should be shown). Bryan Hansen can also provide this GIS data.*

*Pronghorn habitat in Arizona is not categorized as “crucial habitat”. It is high quality, high quality with problems, moderate quality, low quality. Please correct the legend to reflect this.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 1023:**

*(Section 5.3.11.1.1.3, Page 5-442)*

**Desert Bighorn Sheep**

- **Several places in both paragraphs:** Please correct the spelling of “Vermilion” (there is only one “L”).
- **Last line of 2nd paragraph:** Beginning of line should read “and in Kanab Creek Canyon south of ...”
- **General comment:** There is not enough information presented here on bighorn habitat in Arizona. Please add additional text, something such as:

*There are approximately 62,030 acres of suitable habitat along the Vermilion Cliffs identified by AGFD as the Paria Canyon - Vermilion Cliffs Habitat Area. The VCNM*

*RMP allocated 57,070 acres of this site as the Vermilion Cliffs Wildlife Habitat Management (WHA) Area; this WHA was established with the focus on managing the habitat for the benefit of desert bighorn sheep. Bighorn sheep prefer rough, rocky terrain with slopes greater than 20 percent, in order to escape predators. The sheep are rarely found far from this escape cover. The rough and convoluted terrain in this WHA provides excellent bighorn sheep habitat. As stated above, bighorn sheep occasionally come onto the Paria Plateau for foraging and water, and to travel across the plateau to access other suitable habitat areas.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1024:**

*(Section 5.3.11.1.1.3, Page 5-442)*

*The habitat mentioned here IS “pronghorn yearlong crucial” Please verify that the most current dataset is being used. This needs to be looked in to rectify discrepancy. This also directly contradicts the statement in the first paragraph under “pronghorn” on page 4-452 where it is stated that both sides of the road are crucial winter range. Again, the UDWR dataset shows this area on both sides of the road as “yearlong crucial”. A tracking study on this herd was conducted with GPS collars from 2012-14. This is a non-migratory herd and they inhabit this area yearlong.*

**UDWRe Response:**

**AGRC accessed in 2016 shows the area on both sides of US 89 between the Paria River and Big Water area as crucial year-round pronghorn range. The text has been revised and the literature citation updated.**

**BLM Comment 1025:**

*(Section 5.3.11.1.1.3, Page 5-442)*

**Pronghorn**

- ***1st paragraph, Line 3:*** Delete “the” before “East Clark Bench” (not appropriate to use “the” in connection with a proper name).
- ***2nd paragraph, Line 3:*** Replace “Kaibab Creek” with “Kanab Creek”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1026:**

*(Tables 5-108 to 5-110, Pages 5-443 to 5-448)*

*Complete lists of species in the project area would be better suited for an Appendix, since this chapter focuses more on wildlife species that are analyzed in detail.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1027:**

*(Table 5-108, Page 5-443)*

*Costa's hummingbird in Colorado plateau ecoregion? Black-chinned perhaps?? Either way, it would be extremely rare migrant.*

**UDWRe Response:**

**UDWRe agrees with the comment. This is a possible misidentification and is noted as such in a footnote to Table 5-108.**

**BLM Comment 1028:**

*(Table 5-108, Page 5-443)*

*Please insert the correct scientific name for yellow-headed blackbird (*Xanthocephalus xanthocephalus*).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1029:**

*(Section 5.3.11.1.2.1, Page 5-445)*

*Sentence after Table 5-108: Please revise to read "Representative wildlife species of the Colorado Plateau Ecological Region that were not observed during vegetation community mapping are listed in Table 5-110."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1030:**

*(Section 5.3.11.1.2.2, Page 5-446)*

*Sentence after Table 5-109: Please revise to read "Representative wildlife species of the Mojave Desert Ecological Region that were not observed during vegetation community mapping are listed in Table 5-110."*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1031:**

*(Table 5-108, Page 5-447)*

*Several places in this table is an "X" with an asterisk ("X\*") ... what does this mean? It is not defined in the table. And why are we including Great Basin species when nothing earlier on in this wildlife discussion addresses species of the Great Basin Ecological Region?*



**UDWRe Response:**

**The Great Basin Column has been removed from the Table to address the comment.**

**BLM Comment 1032:**

*(Section 5.3.11.2, Page 5-449)*

**1st bullet:**

- **3rd sentence:** Add to the end of this sentence: “or disrupt breeding or other critical behaviors.”
- **4th sentence:** Don’t lump game and non-game species together here, as they have VERY different habitat and life cycle requirements.
- **5th sentence:** Rewrite middle of sentence to read “... reproductive potential and ability to adapt to disturbance rapidly would have ...”
- **Last line:** Delete “previously” (disturbance is disturbance, whether done previously or currently).

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1033:**

*(Section 5.3.11.2.1, Page 5-449)*

*States that “construction performed during non-growing season periods would have . . . restoration deferred until the next growing season”. Suggest not waiting until the next “growing season” to do restoration work. The work should be done sometime in the late summer/early fall so that any revegetation aspect benefits from winter moisture. This is when BLM does restoration on GSENM with great results.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1034:**

*(Section 5.3.11.2.1, Page 5-449)*

*In the discussion of generalized effects to wildlife species the following statement is made:*

*“Substantial disturbance is based on the status, population dynamics, behavior, habitat availability and quality for each species group (e.g. game or non-game species) relative to the type, intensity and duration of a specific effect.”*

*This statement is fine for a general discussion of all wildlife species lumped together, but leads the reader to believe that these factors will be defined for each species analyzed in further detail later in the document.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1035:**

(Section 5.3.11.2.2, Pages 5-449 and 5-450)

**General Comment:** This is a deficient analysis. There is nowhere near enough detail. And stated impacts from construction are “glossed over” and inaccurately minimized.

**1st paragraph:**

- This discussion is not very meaningful. While it is helpful to have total acres lost (for context), there should also be a discussion of general loss of habitat ... for example, what kind of vegetation would be eliminated?
- Delete last part of paragraph (from “by revegetating replaced topsoil” to the end of the paragraph). This statement is not necessarily true ... in many areas, fall is the ideal season to do rehab. work (particularly seeding).

**2nd paragraph:**

- **2nd line:** The acronym “SCADA” has already been defined in Chapter 5, so don’t do so again here.
- **4th line:** Insert “the” after “Except for”.
- **Last sentence:** While “occasional maintenance surveys” may not cause significant impacts, there would be some disturbance (and some wildlife species are very sensitive to human presence). Also, insert “and activities” after “surveys”.

**3rd paragraph:**

- **1st sentence:** But the pipeline route WOULD serve as a barrier to wildlife movement in the short-term, both during construction and also afterwards, until revegetation occurs. Please discuss that here.
- **2nd line:** Please acknowledge that while 2 or 3 growing seasons is the goal (for successful revegetation), this may not actually occur, due to drought or other unforeseen circumstances.
- **Last sentence:** Delete ... this is an inaccurate, unsubstantiated statement.

**4th paragraph:**

- **1st line:** Please rewrite to read “Recreational activities (ATV or OHV use) could occur on”.
- **End of 1st sentence:** What is this conclusion (about the level of effects not likely exceeding the significance criteria) based upon? Without some supporting information, it appears to be an unsubstantiated claim.
- **Last sentence:** Delete ... it may not be possible to actually close routes due to the terrain/vegetation. So don’t build this into the analysis.

**5th paragraph:**

- **1st sentence:** Rewrite the end of this sentence to read “... system penstock would occur during annual periodic maintenance.”
- **2nd line:** What is meant by “either feature”?
- **4th sentence (beginning with “Release of LPP Project water”):** This release WOULD change existing riparian habitat AND alter baseline topography if erosion started to occur from this release of water. Please acknowledge that here.
- **Last sentence:** Delete ... this is an unsubstantiated statement.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 1036:**

(Section 5.3.11.2.2.1, Page 5-450)

**2nd complete paragraph:** “...after revegetation is complete in two or three growing seasons...”  
Please acknowledge that while 2 or 3 growing seasons is the goal, revegetation is rarely complete and restored to predisturbance levels in the arid environments associated with this project in that timeframe.

**UDWRe Response:**

**The comment is acknowledged.**

**BLM Comment 1037:**

*(Section 5.3.11.2.2.1, Page 5-450)*

**3rd complete paragraph:** “Recreational activities (all-terrain vehicle (ATV) or off-road vehicle (ORV)) could increase on maintenance roads...” Please note that ATVS and ORVs would not be allowed on maintenance roads for this project unless TMPs on BLM lands are to be amended for these routes.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1038:**

*(Section 5.3.11.2.2.2, Page 5-450)*

**2nd line:** Delete “antelope” ... pronghorn are not true antelope.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1039:**

*(Section 5.3.11.2.2.2, Page 5-450)*

**3rd line under Mule Deer:** Why is “Highway” in all caps? Please correct this.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1040:**

*(Section 5.3.11.2.2.2, Page 5-450)*

*In the mule deer discussion the following statement is made:*

*“...pipeline and penstock construction during the period from May through October would avoid disrupting this habitat and the effects would not exceed the significance criterion.”*

*The significance criterion has not been defined for mule deer. Also, the habitat will still be disrupted, it’s just that migrating mule deer are unlikely to be present.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1041:**

*(Section 5.3.11.2.2.2, Page 5-450)*

*Recreational activities (all-terrain vehicle (ATV) or off-road vehicle (ORV)) could increase on maintenance roads along revegetated pipeline corridors and direct (road kill) and indirect (noise and activity) effects are possible, but the level of effects would not likely place any population at risk or exceed the significance criteria. Access controls at road heads could minimize potential effects.*

*Disagree with most of this paragraph. OHV will use these access roads if available and with the increase in OHV use it is to be expected. CUMULATIVE EFFECTS, these new access routes will lead to new route proliferation were there was once no route on the ground. This is a very large and real concern for BLM an especially a National Monument when considering Transportation Management.*

*By making the statement that “Road Kill” is expected in Direct Effects; that is a statement that high use and high speeds are expected. Road Kill on a ROW administrative road. Liability will be huge and a “significant” direct effect to the action.*

*This paragraph/section must be addressed in a recreation section as well as Cumulative effects. This paragraph is incorporated into the Wildlife section. Lastly, Under the ROW Grant the ROW holder must provide mitigation measure to address this type of unauthorized use in the ROW.*

**UDWRe Response:**

**Access roads along the pipeline and penstock alignment used for operation and maintenance activities would be closed to public access. UDWRe would not be responsible for patrolling unauthorized OHV overland access to the entire length of these roads. UDWRe expects the details of such measures would be discussed with BLM as the Plan of Development is finalized.**

**BLM Comment 1042:**

*(Section 5.3.11.2.2.2, Page 5-450)*

***Last sentence on page:** Is this statement about construction of the penstock occurring “as far from Highway 89 as possible” is accurate (or even desirable)? Seems like it should be as close as possible to the highway (to minimize vegetation loss and additional habitat disturbance, since the area is already disturbed). And please note that the deer fence has already been constructed.*

**UDWRe Response:**

**The text has been revised to state that the penstock would be constructed within the ROW as far as possible from Hwy 89 so as not to interfere with the construction of any of the mentioned future wildlife mortality reduction measures**

**BLM Comment 1043:**

(Section 5.3.11.2.2.2, Page 5-450)

*Data collected from AZGFD and Utah State due to the newly constructed deer fence along the 12.5 mile stretch shows that migration begins in earnest in October. Therefore BLM recommends that construction take place from May 1 to September 30 and end by October so as to not disrupt migration at least along this fence which funnels deer to only seven crossings. Reports of this new fence and timing of migration are available from UDOT. These ought to be looked at. This applies to any alternative that maintains this route through deer migration corridor.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1044:**

(Section 5.3.11.2.2.2, Page 5-451)

*Mule Deer: "... would occur during the daytime, when deer would not likely be actively migrating..." Deer don't migrate during the day?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1045:**

(Section 5.3.11.2.2.2, Page 5-451)

*High Point Regulating Tank-2 and Hydro Station HS-1 look to be very near to at least one if not two of the mule deer underpasses located along this section of deer fence. The location of these two facilities has not been looked at closely since the construction of the fence and underpasses. Any permanent structure or associated activities could be potentially very detrimental to the deer migration. Suggest more research into this and not placing any permanent structure within at least a half mile of these crossing structures. (They may already be at that distance but this needs to be verified. Also coordinate with UDOT and UDWR for best placement recommendations in regards to deer migration).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1046:**

(Section 5.3.11.2.2.2, Page 5-451)

*In the mule deer discussion the following statement, or similar, is made in several paragraphs:*

*"These disturbance areas would not exceed the significance criterion."*

*What is this claim based upon? The significance criterion has not been defined for mule deer. Thus, this is an unsubstantiated claim.*

**UDWRe Response:**

**See Section 5.3.11.2, "... criteria were used to determine significant effects on wildlife and habitat."**

**BLM Comment 1047:**

*(Section 5.3.11.2.2.2, Page 5-451)*

*The cumulative effects listed under the proposed action should be quantified in some way (acres, miles, etc.). Terms like minor, short-term, and "extending for miles" are vague.*

**UDWRe Response:**

**Your comment is noted.**

**BLM Comment 1048:**

*(Section 5.3.11.2.2.2, Page 5-451)*

**1st complete paragraph on page:**

- **1st sentence:** Rewrite middle of sentence to read "... would cross mule deer crucial winter range in Arizona south of the Kaibab-Paiute ..."
- **3rd sentence:** Delete entire sentence ... the proper point to make is that this acre number is low when compared to the total size of their crucial winter range area.
- **6th and 7th lines:** What is meant by "high-use season" and "low-use periods"? Please define/explain.

**2nd complete paragraph on page:**

- **2nd sentence:** What would the mentioned upgrading of existing dirt roads consist of? Widening? This is not included in the description of the alternatives in Chapter 3 (and it needs to be).
- **Last sentence:** Rewrite end of the sentence to read "... five miles of crucial winter mule deer range in Arizona."

**3rd complete paragraph on page:**

- **2nd line:** Delete "the" before "Canaan Gap" (don't use "the" when referring to a proper name).
- **5th/6th lines:** What is meant by "high-use season" and "low-use periods"? Please define/explain.
- **Last sentence:** What is this conclusion based upon? Appears to be another unsubstantiated claim.

**4th complete paragraph on page:**

- **2nd line:** Delete the hanging "w" before "(Figure 5-156)".
- **1st/2nd lines:** "Migration crossing" of what? Please explain.

**UDWRe Response:**

**The suggested edits from the first, fourth, fifth, sixth, ninth, and tenth bullets of the above comment have been incorporated.**

**The text has been revised to address the comment in the second bullet.**

**“High-use” is defined in the first paragraph of Section 5.3.11.2.2.2. By deduction, low-use is also defined in the same paragraph.**

**The conclusion is based on the low number of acres disturbed relative to the total number of crucial winter range acres.**

**BLM Comment 1049:**

*(Section 5.3.11.2.2.2, Page 5-451)*

*The 9.5 mile access road east of Fredonia would consist of .7 miles of new road and 8.8 miles of upgraded road. The disturbance effect of this would exceed the actual footprint of 1.2 acres of new construction since roads have effects extending beyond the actual road surface, especially since an upgraded road would allow for more recreational traffic traveling at higher speeds.*

**UDWRe Response:**

**The text states “1.2 acres of permanent disturbance.”**

**BLM Comment 1050:**

*(Section 5.3.11.2.2.2, Page 5-451)*

*The first paragraph under the Desert Bighorn Sheep section states:*

*“All Proposed Action features would be constructed within or adjacent to the U.S. Highway 89 right-of way and congressionally-designated utility corridor, and would cause temporary disturbance in the bighorn sheep seasonal range for a period of up to one year. It is unlikely that this disturbance would materially affect sheep migration patterns or exceed the significance criterion.”*

*One year of disturbance seems significant but without the significance criterion being defined for bighorn sheep how is anyone to know? These effects are dismissed without a logical argument to back it up. Also, keep in mind that bighorn sheep are VERY sensitive to human presence ... please discuss that here.*

**UDWRe Response:**

**Significance criteria are established in Section 5.3.11.2.1.**

**BLM Comment 1051:**

*(Section 5.3.11.2.2.2, Pages 5-451 and 5-452)*

**2nd paragraph in the Desert Bighorn Sheep section:** *Please rewrite the end of the sentence to read “...no effects to bighorn sheep habitat.” (We do not use “seasonally important” range here on the AZ Strip ... if it’s identified as habitat, it is considered important.)*

**3rd paragraph in the Desert Bighorn Sheep section:** *This is an inadequate analysis of impacts to bighorn sheep ... it doesn’t really say/analyze anything, and does not include a discussion of impacts due to human disturbance. Please rewrite the paragraph to read;*



*“Desert bighorn sheep year-long crucial range crosses the area of potential effect at the Cockscomb (Figure 5-156). Desert bighorn sheep are very sensitive to human presence, particularly during lambing season. Human encroachment in bighorn sheep habitat impacts the species through habitat fragmentation, increased noise, and an increased number of humans. Numerous researchers have documented altered bighorn sheep behavior in response to human-related disturbance, including hiking, camping, and motorized vehicle use. Bighorn sheep may also alter their use of essential resources resulting in physiological effects or abandonment of traditional habitat as a result of human disturbance (Wallis 2005). Frequent vehicle activity causes sheep to reduce or abandon their use of water sources and surrounding areas. In addition, energy losses due to disturbances (flight, loss of foraging time, and increased stress levels) might result in deleterious effects on physiology, behavior, or fat reserves of sufficient magnitude to reduce survival and reproductive success. However, operations and maintenance activities associated with the LPP project within this crucial habitat would occur infrequently. In addition, no activities would occur in or near habitat in Arizona. Thus, effects to the species would be minimal.”*

*Citation for above reference is: Wallis, K. 2005. The Biogeography of the Sierra Nevada Bighorn Sheep (Ovis canadensis sierra). Unpublished document. San Francisco State University.*

*Need to also add a discussion on impacts to bighorn from construction activities.*

#### **UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**UDWRe’s view is that the text is appropriate as written.**

#### **BLM Comment 1052:**

*(Section 5.3.11.2.2.2, Page 5-452)*

##### **Pronghorn**

- **1st paragraph, line 1:** Delete “the” before “East Clark Bench” (it’s not appropriate to use “the” in connection with a proper name).
- **1st paragraph, lines 3-4:** The acronym “ROW” has already been defined, so don’t do so again here.
- **1st paragraph, 2nd sentence:** Delete “although its proximity ... for pronghorns.” This is an inaccurate statement ... I’ve seen quite a few pronghorn in this area.
- **1st paragraph, last sentence:** Need more analysis to support the statement that the two staging areas would not affect pronghorn habitat.
- **2nd paragraph, 2nd line:** Rewrite to read “Indian Reservation, west of Kanab Creek, and on Yellowstone...”
- **2nd paragraph, 4th sentence:** What would the mentioned upgrading of existing dirt roads consist of? Widening? This is not included in the description of the alternatives in Chapter 3 (and it needs to be).
- **2nd paragraph, 5th sentence:** Would this “28-acre construction staging area” be new disturbance? And where would it be located? (This information is not provided in Chapter 3.)
- **2nd paragraph, last sentence:** Delete “; this would not be significant because of the extensive area of equivalent habitat adjacent to the area of potential effect.” This is an inaccurate statement because there is very little high quality pronghorn habitat in the area. Thus, the impact to pronghorn habitat in Arizona would (at the very least) be moderate, certainly not insignificant.

- **3rd paragraph, first sentence:** *Is this statement (on permanent habitat disturbance being insignificant) referring to Utah – as stated above, it is untrue for Arizona.*
- **3rd paragraph, last sentence:** *What is considered a “pronghorn high use period”? Is this a breeding season? Please clarify.*
- **4th paragraph, first sentence:** *Middle of sentence should read “... high-quality range; occasional maintenance activities and visits to ...” Also, what about impacts from construction?*

**UDWRe Response:**

**The suggested edits from the first, second, third, fifth, eighth, eleventh bullets of the above comment have been incorporated.**

**Staging areas were located on a preliminary basis and could be relocated after consultation.**

**BLM Comment 1053:**

*(Section 5.3.11.2.2.2, Page 5-452)*

*The second paragraph under the Pronghorn section only discusses the effects to high quality habitat. Approximately 17.7 miles of pipeline would also be constructed in Moderate quality habitat totaling 129 acres of permanent disturbance.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1054:**

*(Section 5.3.11.2.2.2, Pages 5-452 and 5-453)*

*UDWRe would coordinate with Utah Division of Wildlife Resources to schedule construction outside of pronghorn high use periods in the construction corridors- these would be mitigations to offset the impacts of construction and should be identified upfront. Typically of concern would be pronghorn fawning periods?*

**UDWRe Response:**

**Refer to Section 5.3.11.3 Protection, Mitigation and Enhancement Measures  
UDWRe would attempt to coordinate with Utah Division of Wildlife Resources to schedule construction outside of pronghorn high use periods in the construction corridors.**

**BLM Comment 1055:**

*(Section 5.3.11.2.2.3, Page 5-453)*

***First paragraph:** States that construction corridors should be cleared outside of nesting/fledging period but this period is not defined. For Kane County area this could be as early as April for areas from Page to Cockscomb and May from there towards Kanab and go until mid to late July. If veg. needs to be cleared within this time frame, a survey would need to occur to clear the area.*

**UDWRe Response:**

**Refer to Section 5.3.11.3 Protection, Mitigation and Enhancement Measures**

- Clearing of trees and other vegetation should be conducted outside of the nesting and fledging period or if performed during the nesting season as determined by AGFD and UDWR avian nesting survey would be conducted to locate active nests to be flagged for avoidance or to be removed in compliance with USFWS, AGFD, or UDWR direction.

**BLM Comment 1056:**

(Section 5.3.11.2.2.3, Page 5-453)

*First paragraph of the “Direct Effects” section contains the following statement:*

*“..much of the construction corridor would be located in or adjacent to areas of existing land use or disturbance that reduce its habitat value.”*

*This statement seems to contradict the following statement found in the Section 5.3.11.1:*

*“Approximately 14 percent of the alternative corridors are within or adjacent to developed areas, existing highway right-of-ways, access roads, transmission line right-of-ways or other disturbed areas that have reduced habitat and wildlife values (LSD 2010).”*

*14 percent should not be considered “much”.*

**UDWR Response:**

**The text has been revised to address the comment.**

**BLM Comment 1057:**

(Section 5.3.11.2.2.3, Page 5-453)

**Direct Effects**

***1st paragraph, lines 1 and 4:*** These acreage figures (1,452 and 1.773) seem like quite a bit, particularly on the Arizona side where there is not a large amount of “suitable” habitat in the surrounding areas, at least for big game.

***1st paragraph, line 1:*** This statement (about the pipeline alignment being located in or adjacent to areas of existing development/disturbance) is inaccurate for the Arizona Strip, at least for the Proposed Action. The proposed route LEAVES areas of existing disturbance (which would be followed under the Existing Highway Alternative) and traverses largely across areas that have not been previously disturbed.

***2nd paragraph:*** Please explain this statement on “minor mortality of small terrestrial species.” There is currently no explanation of why/how this conclusion was reached.

**Indirect Effects**

***1st paragraph, line 2:*** Delete “abundant” – as stated above, there is not a large amount of “suitable” habitat in the surrounding areas, at least for big game.

**1st paragraph, last sentence:** *This statement (about the project not placing any populations at risk or exceeding the significance criteria) is not adequately explained. Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**2nd paragraph, 1st line:** *Delete "surveys and". Maintenance "surveys" are considered maintenance activities.*

**2nd paragraph:** *This statement (about operation and maintenance activities being minimal and not being significant) is not adequately explained. Please explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The suggested edits from the fourth and seventh paragraph of the above comment have been incorporated.**

**UDWRe's view is that minor mortality of small terrestrial species would be possible from maintenance activities is self-evident.**

**UDWRe's view is that the text is otherwise appropriate as written.**

**BLM Comment 1058:**

*(Section 5.3.11.2.2.3, Page 5-453)*

*Are there any BMPs being proposed to address the direct effects to wildlife listed here? Do the measures identified in Section 5.3.11.3 apply? If so, refer to that section and then include the anticipated effects of implementing those measures in this analysis. Also, significance criteria are still not defined.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Significance criteria are defined in Section 5.3.11.2.1.**

**BLM Comment 1059:**

*(Section 5.3.11.2.2.2, Pages 5-453 and 5-454)*

*The effects analysis of the Existing Highway Alternative for mule deer, bighorn sheep, and pronghorn are perfunctory.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1060:**

*(Section 5.3.11.2.3.2, Page 5-454)*

**Pronghorn:** Please rewrite the last sentence to read “There would be no effects to pronghorn high value habitat in Arizona because no pipeline construction, staging areas, or access roads would be located within that habitat.”

*What about impacts to moderate quality habitat?*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**AGFD is not able to provide any habitat designations for the antelope habitat in Arizona – see HabiMap for the antelope distribution in the area - so we don’t know where “moderate” habitat is or what defines “moderate habitat”**

**BLM Comment 1061:**

*(Section 5.3.11.2.3.3, Page 5-454)*

*This statement is inaccurate. While the impacts to wildlife populations would be the same as the Proposed Action across much of the LPP project area, where the two alignments diverge would result in dramatically different impacts. Impacts where the pipeline would cross the Kaibab Paiute Indian Reservation (the Existing Highway Alternative) would be dramatically less than under the Proposed Action because the pipeline route would follow an existing paved highway (already a disturbed area, with regular highway traffic) versus traversing/disturbing previously-undisturbed habitat. Please correct this.*

**UDWRe Response:**

**The proposed action would follow an existing 500kV transmission line and maintenance road. Short term disturbance (disturbance during construction) would be comparable between alternatives. Permanent disturbance to habitat would be similar; although the alignment would follow the highway alignment effects to native vegetation in previously undisturbed areas would occur in both alternatives.**

**BLM Comment 1062:**

*(Section 5.3.11.2.4.1, Page 5-455)*

*Impacts under the Southeast Corner Alternative would be essentially the same as Proposed Action, except where the two alignments diverge. (This fact should be made clear in this analysis.) Impacts under the Southeast Corner Alternative would be less than the Proposed Action because the pipeline would follow a large (500-kV) transmission line, a route where disturbance has occurred in the past. Please correct this analysis to reflect that.*

*Also, why is it listed that short-term effects on Colorado Plateau Region wildlife habitat would be the same amount of acres as for Proposed Action, when this pipeline alignment is slightly shorter? Please explain why the long-term disturbance areas would only be 68 acres less under this alternative (as compared to Proposed Action).*

*As is, it is hard to tell exactly what the effects from this alternative are.*

**UDWRe Response:**

Section 5.3.11.2.4.1 has been revised to read:

The only difference between the South Alternative and the Southeast Corner Alternative would be shortening of the penstock corridor by approximately 1.4 miles. This would reduce the net permanent habitat disturbance area by 10.7 acres and the temporary habitat disturbance area by 9.0 acres. Permanent habitat disturbance area includes 45.13 acres within the Kaibab-Paiute Indian Reservation. The difference in net total disturbance area is less than one percent between the alternatives. This difference would not be material and impacts would be the same as described in Section 4.4.1.1.1 except where the two alignments diverge since the southeast alternative would follow the existing 500-kV transmission line where disturbance has occurred in the past.

**BLM Comment 1063:**

*(Section 5.3.11.2.4.1, Page 5-455)*

*Lines 9-11: Delete “during the growing season. Construction performed during non-growing season periods would have wildlife habitat restoration deferred until the next growing season begins.” This statement is not necessarily true ... in many areas, fall is the ideal season to do rehab work (particularly seeding). So let’s not limit ourselves to only doing work during the growing season.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 1064:**

*(Section 5.3.11.2.5, Page 5-455)*

*There are no distinct “transmission line alternatives” ... construction and operation of transmission lines is built into each of the separate alternatives. Thus, merge this section (and sub-sections 5.3.11.2.5.1 through 5.3.11.2.5.3) into the previous sub-sections on impacts by alternative.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 1065:**

*(Section 5.3.11.2.5.1, Page 5-455)*

*2nd paragraph: “Clearing” of vegetation would not just occur due to potential contact with the electrical lines and powerline arcing. It would also be necessary at the location of each and every power pole. Please add that to this analysis.*

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 1066:**

(Section 5.3.11.2.5.1, Page 5-455)

*Paragraph references a tree “Little Utah Juniper”. Please remove the word “Little” and just call it “Utah Juniper”.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1067:**

(Section 5.3.11.2.5.1, Page 5-456)

**9th/10th lines on page:** Delete “equivalent or better quality”.

**1st complete paragraph on page:** While human presence may be minimal, there would still be SOME which would temporarily disturb wildlife. Please acknowledge this in this analysis.

**Last paragraph in section:** Please rewrite as follows “New or upgraded access roads along transmission lines would lead to increased OHV activity on these roads; however, the magnitude of the potential disturbance is not possible to estimate at this time.” Please note that it may not be possible to actually close routes due to the terrain/vegetation. So don’t build this into the analysis.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1068:**

(Section 5.3.11.2.5.2, Page 5-456)

**1st paragraph, last sentence:** What is considered a “crucial high use” period? Please clarify.

**2nd paragraph, 1st sentence:** While human presence may be minimal, there would still be SOME which would temporarily disturb wildlife. Please acknowledge this in this analysis.

**3rd paragraph:** Delete “off-road” from 1st line. Delete 2nd sentence – it may not be possible to actually close routes due to the terrain/vegetation, so don’t build this into the analysis.

**UDWRe Response:**

**The text has been revised to read “the crucial high use period of November 1 to April 15”.  
The text changed to address the remainder of the comment.**

**BLM Comment 1069:**

(Section 5.3.11.2.5.2, Page 5-456)

**Desert Bighorn Sheep**

Rewrite to say “There would be no Electrical Transmission Line System features constructed or operated within any desert bighorn sheep habitat within the LPP Project Area.” Then need to add a summary statement on effects to seasonal ranges and migration routes (just because no



*transmission line would be built in sheep habitat, there could still be impacts from the line on migration routes).*

**UDWRe Response:**

**The sentence “There would be no Electrical Transmission Line System features constructed or operated within any desert bighorn sheep habitat within the LPP Project Area.” has been deleted.**

**BLM Comment 1070:**

*(Section 5.3.11.2.5.2, Page 5-457)*

**Pronghorn**

- **2nd line:** Delete “the” before “East Clark Bench” (not appropriate to use “the” in connection with a proper name).
- **5th line:** This mentions “permanent effects” ... what about any temporary effects?
- **5th and 6th lines:** What exactly are the significance criteria referred to here?
- **Last sentence:**
  - What is considered a “seasonal high use area”?
  - Effects on pronghorn in Arizona are not addressed ... please add.

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment has been incorporated.**

**Significance criteria listed in section 5.3.11.2.1 - seasonal high use periods would be determined in consultation with UDWR – see the response to BLM Comments 1048 and 1060. AGFD is not able to provide any habitat designations for the antelope habitat in Arizona other than winter and summer. The assumption can be made that winter is “crucial” summer is “moderate” but would not be able to reference AGFD in these habitat designations.**

**BLM Comment 1071:**

*(Section 5.3.11.2.5.3, Page 5-457)*

**Indirect Effects**

***Several places in this section:*** What exactly are the significance criteria referred to here?

***1st paragraph:***

***Line 2:*** “Excavation”? or “Construction”?

***Line 3:*** Insert “line” after “transmission”.

***4th paragraph:*** Please rewrite as follows “New or upgraded access roads along transmission lines would lead to increased OHV activity on these roads; however, the magnitude of the potential disturbance is not possible to estimate at this time.” Please note that it may not be possible to actually close routes due to the terrain/vegetation. So don’t build this into the analysis.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1072:**

(Section 5.3.11.2.5.3, Page 5-457)

*“Transmission lines are known hazards...” Comment- raptors use towers for nesting and perching. Also incorporate APLIC 2012 Reducing Avian Collisions - [http://www.aplic.org/uploads/files/11218/Reducing\\_Avian\\_Collisions\\_2012watermarkLR.pdf](http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf)*

**UDWRe Response:**

**The reference has been inserted as appropriate throughout the study report (EEI 2012) and is included in the references.**

**BLM Comment 1073:**

(Section 5.3.11.2.5.3, Page 5-457)

*It is possible that new or upgraded access roads along transmission lines could lead to increased recreational off-road vehicle activity and associated road kill mortality; however, the level of effects would not likely place any population at risk or exceed the significance criteria. Access controls at road heads would minimize potential effects. - Based on this write-up it appears this will be a high use and high speed maintenance road. Road Kill on and access road? Mitigation measure needs to be included to address un-permitted public use.*

**UDWRe Response:**

**Access roads are not anticipated to be high use or high speed. Access will be controlled by the applicant, land management agency, or the landowner.**

**BLM Comment 1074:**

(Section 5.3.11.2.5.3, Page 5-458)

*It is possible that new or upgraded access roads along transmission lines could lead to increased recreational off-road vehicle activity and associated noise and disturbance that would lower habitat values; however, the magnitude of the potential disturbance is not possible to estimate at this time. Access controls at road heads would minimize potential effects.  
- an increase in OHV use with this type of un-mitigated ROW will increase OHV use and routes proliferation.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1073.**

**BLM Comment 1075:**

(Section 5.3.11.2.5.3, Page 5-458)

**Direct Effects**

***Last paragraph in section:*** Please rewrite as follows “New or upgraded access roads along transmission lines would lead to increased OHV activity on these roads; however, the magnitude of the potential disturbance is not possible to estimate at this time.” Please note that it may not be possible to actually close routes due to the terrain/vegetation. So don’t build this into the analysis.

**UDWRe Response:**

**The suggested edit from the first half of the paragraph of the above comment has been incorporated.**

**BLM Comment 1076:**

*(Section 5.3.11.2.6, Page 5-458)*

*The analysis on impacts under the No Lake Powell Water Alternative is very inadequate. This analysis should include the same sub-sections as for the Proposed Action – i.e., it should include discussions (in distinct sections) on the direct and indirect effects to:*

- *Wildlife habitat*
- *Big game crucial habitat and migration routes*
- *Wildlife Populations.*

*This discussion should include impacts to mule deer, bighorn sheep, pronghorn, and other wildlife species. None of this is currently included.*

**UDWRe Response:**

**UDWRe’s view is that the text is adequate as written.**

**BLM Comment 1077:**

*(Section 5.3.11.2.6, Page 5-458)*

*This discussion of the impacts to wildlife from the “No Lake Powell Water Alternative” states the following:*

*“The No Lake Powell Water Alternative could have long- term indirect effects on wildlife habitat adjacent to the Virgin River in the St. George metropolitan area. These effects could result from eliminating use of potable water for outdoor residential landscape watering and reduced return flows reporting to the Virgin River. Effects could reduce wildlife habitat and could reduce wildlife populations of small mammals and avian species dependent on Virgin River riparian habitat.”*

*The assertion that eliminating residential watering would reduce return flows to the Virgin River is quite faulty, and seems to directly contradict information found in at least one source cited in the PLP analysis:*

*From Section 5.13C.7.1.1 in the Lake Powell Pipeline Phase I - Preliminary Engineering and Environmental Studies. UDWR (2009) – Appendix A in the Groundwater Resources Study Report:*

*“Volumetrically, the primary flow remains northward toward the Virgin River and away from the groundwater table mound. The dominant northward flow direction precludes recharge from the Pine Valley Mountains, northwest of the reservoir area, considered the primary source of regional groundwater recharge (USGS 2000), the Hurricane Cliffs to the east, and the Virgin River to the north and west. This suggests that **natural recharge in the vicinity of the reservoir occurs largely as a result of local precipitation** within Sand Hollow.” (Emphasis added)*

*Residential landscape watering is not mentioned as a significant source of groundwater recharge, and therefore return flow to the river. Most residential watering in the St. George area occurs from spring to fall when much of the water is absorbed by plants or lost through evapotranspiration. When areas are watered excessively some water could be available for groundwater recharge, but this would seem to be a minor contribution to the overall recharge (since it is not mentioned as a source in the USGS or UDWR studies).*

*As a reader of the PLP, we are not led to the logical conclusion that the No Lake Powell Water Alternative would have long- term indirect effects on wildlife (i.e., riparian) habitat adjacent to the Virgin River based on the information provided. Further study and analysis is needed on the baseline return flows to the Virgin River system from residential landscape watering (in acre feet per year), the relative importance of this source of return flows compared to the other significant sources detailed in the studies, and the relationship to water flows in the Virgin River.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1078:**

*(Section 5.3.11.2.6, Page 5-458)*

*The conclusion in this section that the No LPP water alternative may do long-term harm to riparian wildlife and habitat along the Virgin River may not be accurate. The premise is that eliminating potable water use for outdoor landscaping would substantially reduce groundwater return flows. There is not adequate hydrologic data to back up this premise and resulting conclusion. Much of the outdoor landscaping in Washington County, especially golf courses and residential lawns, is watered through sprinkler systems. This type of watering is wasteful in terms of high evaporation losses (especially during the hot summer months). It may also only moisten the soil to a shallow depth, with little or no deeper percolation down to strata that may then move the water back toward the Virgin River. This section may be perceived as a bias against how the No LPP water alternative is contrasted with the pro-build alternatives.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1079:**

*(Section 5.3.11.2.7, Page 5-458)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1080:**

*(Section 5.3.11.3, Page 5-458)*

*Please add the following protection measure to this list:*

*“Any hollow metal and/or plastic (PVC) pipes and posts used temporarily during construction or left permanently in place would be capped to prevent birds, small mammals, or reptiles from becoming entrapped.”*

**UDWRe Response:** (MWH and MWH subconsultant)

**The suggested edit has been incorporated.**

**BLM Comment 1081:**

*(Section 5.3.11.3, Page 5-458)*

**1st bullet:** *What is considered the “periods of greatest use”?*

**2nd bullet:** *“Safe speeds” are defined as what?*

**7th bullet:** *Rewrite this stipulation as follows – “Construction and facility sites would be kept free of all trash, including food refuse and micro-trash. Micro-trash includes small and easily ingestible materials such as bottle caps, broken glass, cigarette butts, small plastic bits, bullets, bullet casings, and food materials. Sites would be cleaned up at the end of each day (e.g., trash removed and scrap materials picked up) to minimize potential ingestion of trash by wildlife.”*

**8th bullet, 1st line:** *Replace “should” with “would”.*

**9th bullet:** *Please rewrite this stipulation as follows – “Pipeline, penstock and electrical transmission line construction in winter crucial mule deer habitat would be coordinated with the Utah Division of Wildlife Resources [and Arizona Game and Fish Department????], and scheduled from May through October to avoid effects on migrating mule deer.” Effects only on migrations? Is this stipulation intended to avoid any other effects on mule deer?*

**UDWRe Response:**

**Periods of high use are generally November 1 through April 15.  
Safe speeds will vary according to the species but could be as low as 15 mph.  
The suggested edits from the third, fourth, and fifth paragraphs of the above comment have been incorporated.**

**BLM Comment 1082:**

*(Section 5.3.11.3, Page 5-458)*

*“...barriers and working lights placed along open trenches at the completion of each day...”  
Lights along trenches would have visual effects during construction. Include in proposed action and effects analysis. Lights would also probably attract some wildlife.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1083:**

*(Section 5.3.11.4.1, Pages 5-459 and 5-460)*

*Add the cumulative effects of Jackson Flat Reservoir and the Fredonia Flood Retarding Structure (on Colorado Plateau Region vegetation) – this is currently lacking in this analysis.*

***Last line of 1st paragraph:*** Impacts would be “major” not “minor.” Add the number of acres that would be permanently lost from the project. When combined with loss of Mojave Desert vegetation (i.e., habitat) from other development and fire, the effects would be significant.

***3rd paragraph:*** Impacts would be “significant” not “minor and short-term.” When combined with loss of Mojave Desert vegetation (i.e., habitat) from other development and fire, the effects would be significant. And much of this loss of Mojave Desert habitat would be permanent (not short-term).

***4th paragraph:***

- *Impacts would be “significant” not “minor and short-term.” When combined with loss of Mojave Desert habitat from other development and fire, the effects would be significant. And much of this loss of Mojave Desert habitat would be permanent (not short-term) – the permanent facilities from the LPP project aren’t going away (and thus are “permanent”).*
- ***4th line:*** The acronym “OHV” has already been defined in Chapter 5, so don’t do so again here.
- ***Last line:*** Please rewrite this line to read “... effects mitigated somewhat by revegetation along portions of the ROW following construction.” Remember that new access roads for the project would not be revegetated.

***Last paragraph of section:*** Please delete this entire paragraph. It is not relevant to this section (5.3.11) on wildlife habitat along the Lake Powell Pipeline proposed alignment.

**UDWRe Response:**

**UDWRe’s view is that the text is appropriate as written**

**BLM Comment 1084:**

*(Section 5.3.11.5.2, Page 5-461)*

*Need to acknowledge that much more of this alignment would be along an existing highway (Highway 389), where much disturbance has already occurred (vs. the Proposed Action, which would have brand new disturbance). The cumulative impacts on wildlife habitat would therefore be quite different (Proposed Action would be much more detrimental to wildlife habitat than the Existing Highway Alternative).*

**UDWRe Response:**

**UDWRe’s view is that the difference in impacts to habitats are evident when comparing the two paragraphs.**

**BLM Comment 1085:**

*(Section 5.3.11.5.2, Page 5-461)*

*This analysis is inaccurate. Wildlife habitat would not be affected by landscaping watering (please see Comment 1077 on Section 5.3.11.2.6). Thus, please rewrite this section as follows:*

*The No Lake Powell Water Alternative would have no long- term unavoidable adverse effects on native vegetation communities in the LPP Project area.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1086:**

*(Section 5.3.11.5.2, Page 5-461)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to vegetation under the No Action Alternative.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1087:**

*(Section 5.3.12, Multiple Pages)*

*“Mojave” is misspelled throughout this section. The only time where it is spelled “Mohave” is when referring to the County. When referring to the Mojave Desert (ecosystems and the desert tortoise), it is spelled with a “J” ... Please correct this.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1088:**

*(Section 5.3.12.1, Page 5-463)*

**1st paragraph, Lines 1, 2:** *The acronyms “USFWS” and “ESA” have already been defined in Chapter 5, so don’t do so again here.*

**2nd paragraph, Line 2:** *Insert “and BLM sensitive species” before “are analyzed”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1089:**

*(Section 5.3.12.1.1, Page 5-463)*

**3rd, 4th lines:** *Delete “pipeline and transmission line alignments, access roads and staging areas” ... what matters is effects from the PROJECT overall, so don’t need to list all these separate aspects of the project.*

**UDWRe Response:**



**The sentence adds clarity that all project aspects are evaluated collectively and singularly. UDWRe's view is that the text is appropriate as written.**

**BLM Comment 1090:**

*(Table 5-111, Page 5-463)*

*Greater sage grouse should be removed from Table 5-111.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1091:**

*(Table 5-111, Page 5-463)*

*Greater sage-grouse- recommend removing it from the table entirely- BLM is still considering greater sage-grouse a BLM Sensitive species. Recommend moving it to the appropriate section %3.12.1.2 and Table 5-112. It would appear that the LPP project does not cross PHMA/GHMA and is over 13 miles from the nearest PHMA/GHMA. Recommend removing sage- grouse from further analysis.*

*Mohave Desert tortoise - recommend using the USFWS spelling of Mojave Desert tortoise.*

*Utah prairie dog- recommend omitting Utah prairie dog from the table and subsequent analysis because the LPP project does not come close to Utah prairie dog occupied habitat in Kane or Washington counties.*

*Notes: Check reference in Note 4- should follow the publication date as identified in the Federal Register - Greater sage-grouse were found not to warrant listing October 2, 2015 80 FR 59857.*

*Source: recommend updating the species list/verifying through USFWS IPAC system- the most recent date is over 3 years old.*

*Additional recommendation for Table 5-111; based on the recommendations above to remove some species from further analysis, another column could be added to the table that explains whether a species is being carried forward for analysis or not and the rationale for those that are not.*

**UDWRe Response:**

**IPaC was accessed in March 2016. The text has been revised to address the comment.**

**BLM Comment 1092:**

*(Section 5.3.12.1.1 and Table 5-111, Page 5-463)*

**First paragraph:** *Again, USFWS paints with a very broad brush in order to cover their bases, but specialists need to use logic to determine which species could really potentially be affected. At least for Kane County, the Mexican Spotted Owl, Utah Prairie Dog, Yellow-billed cuckoo, and greater sage grouse have as much potential of being in the project area as a sasquatch does. Utah Prairie dog has never been observed this far south in Kane County—never. MSO reside in canyons of the Paria but nearly 20 miles or more from the pipe location (even though critical*

*habitat extends further southward. Yellow-billed cuckoo have been surveyed for along the Paria and have never been documented and no suitable habitat exists for them. Sage grouse are at least 20 miles from the pipeline at the north end of Johnson Canyon—no chance of being in the area. Many of these species could be dealt with right away, even just in the table and dismissed using solid logic. Just an opinion.*

**UDWRe Response:**

**Refer to the Final Study Report 13 - Special Status Wildlife Resource – these determinations are made throughout the report.**

**BLM Comment 1093:**

*(Section 5.3.12.1.1.1, Page 5-464)*

**Listing History:**

- **Lines 2, 5:** Insert “a portion of” before “northern Arizona”. (There are parts of northern AZ that are outside the 10(j) area.)
- **Line 2:** Insert “and southern Utah” after “northern Arizona”.

**Distribution:**

- **Line 6:** Please correct the spelling of “Vermilion” (there is only one “L”).
- **Line 9:** Please update the current population of condors in Arizona/Utah (look at The Peregrine Fund website).

**UDWRe Response:**

**The text has been changed to address the comment.**

**BLM Comment 1094:**

*(Section 5.3.12.1.1.1, Page 5-464)*

*The California condor population in AZ/UT will need to be updated.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1093. The current estimate is 80 individuals.**

<http://www.fws.gov/cno/es/pdf%20files/Ca-Condor-Recovery-Prog2015PopulationStatus.pdf>

**BLM Comment 1095:**

*(Section 5.3.12.1.1.1, Page 5-465)*

**Life History and Ecology:**

- **Last line of 1st complete paragraph on page:** Please define “potreros” (many readers will not know what this is).
- **Last line of 2nd complete paragraph on page:** Please add information about the voluntary lead reduction program that AGFD has developed (and that BLM is a partner in). This program has been very successful in reducing lead poisoning in the reintroduced condor

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1096:**

*(Section 5.3.12.1.1.2, Page 5-466)*

**Life History and Ecology:**

- **5th sentence in 1st complete paragraph:** Sentence beginning with “They nest in these areas ...” – delete this sentence ... it is repeated in the following paragraph, and is more appropriate there.
- **1st line of 2nd paragraph:** Change “begins” to “beginning”.
- **2nd line of 3rd paragraph:** Insert a comma after “hiking”.

**Designated Critical Habitat:**

- **2nd line:** “Marble Canyon National Monument”??? There is no such place. Please delete or change to correct location.
- **4th line:** Delete “the” before “Grand Staircase” (don’t use “the” when referring to a proper name).

**UDWRe Response:**

**Unit CP–10. Removed Marbel Canyon National Monumnet and added a reference to USFWS 2004 Designated Critical Habait for MSO.**

**The text has been revised to address the comment.**

**BLM Comment 1097:**

*(Section 5.3.12.1.1.3, Page 5-467)*

**Distribution:**

- **2nd line:** Add “and northwestern Arizona” after “southwest Utah”.
- Please add that there is some suitable nesting habitat in Kanab Creek Canyon, in both Utah and Arizona.

**Life History and Ecology:**

- **3rd line in 1st paragraph:** Delete colon after “are”. Also, please be consistent use consistent terminology: tamarisk/salt cedar (it’s referred to as “tamarisk” here but called “salt cedar” elsewhere in this section.
- **6th line of 1st paragraph:** Replace “ha” with “hectare”; also add, in parentheses, what this amounts to in acres.
- **7th line of 1st paragraph:** Add, in parentheses, what this amounts to in feet.
- **1st/6th lines of 2nd paragraph:** Should be “southwestern” willow flycatcher.
- **Last line of 2nd paragraph:** Insert “south from the U.S.” after “migrating”.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1098:**

*(Section 5.3.12.1.1.3, Page 5-467)*

**Designated Critical Habitat**

*Southwestern willow flycatcher critical habitat has been designated along the Virgin River in northwestern Arizona and southwestern Utah (Virgin Management Unit). (USFWS 2010d; USFWS 2010e). This habitat extends from approximately 6.9 miles north of the headwaters of Lake Mead in Nevada to a point approximately 1.4 miles north of the Washington Fields Diversion in Utah (USFWS 2010f).*

*The Paria River has Designated Critical Habitat on the lower end of the Paria River where this project goes through.*

*It's discussed further in the document but should also be listed here too.*

**UDWRe Response:**

**The following text has been added:**

**“The project area is proximate to the stream segments designated as critical habitat within the Virgin Management Unit of the Lower Colorado Lower Colorado Recovery Unit and the Paria River north of US 89 of the Powell Management Unit (FR Vol 78 No. 2 January 3, 2013).”**

**BLM Comment 1099:**

*(Section 5.3.12.1.1.3, Page 5-467)*

*This needs to be updated. Several years ago, the USFWS designated critical habitat for the SWWFL along the Paria River. This designation went against the recommendation of GSENM but nevertheless, it happened. The habitat extends from the bridge on US89 north approximately 12 miles to the Paria Box. The proposed pipeline route goes right through this critical habitat. Anyway, this needs to be updated and addressed. Numerous surveys by GSENM and UDWR have produced only a handful of SWWFL during migration times anywhere along the Paria river. Keith Day with UDWR would have the information on this (865-6100). Keith would also have info. on yellow-billed cuckoo which have been surveyed for along the Paria but never found. Because of this new information though, the entire analysis throughout the document regarding SWWFL needs to be adjusted. This will probably change the effect determination from “no effect” to “may effect not likely . . .”*

**UDWRe Response:**

**The study report has been revised to be current with regard to the SWWFL CH status.**

**BLM Comment 1100:**

*(Section 5.3.12.1.1.4, Page 5-468)*

*Recommend removing Utah prairie dog from further analysis.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1101:**

(Section 5.3.12.1.1.5, Pages 5-469 and 5-470)

**Distribution**

• **Last sentence:** A suitable habitat also exists at the Virgin River/Beaver Dam Wash confluence north of Mesquite, NV. Add that here.

**Life History and Ecology:**

- **5th line in 1st paragraph:** Delete “(Populus sp.)” – this has already been “defined” in this special status species section, so we don’t need to do so again.
- **8th line of 1st paragraph:** Please add, in parentheses, what this amounts to in feet
- **Last line of 1st paragraph:** “east” should not be capitalized.

**Designated Critical Habitat:**

- **1st sentence:** While this is true (that no critical habitat has been designated), USFWS is in the process of doing so – the proposal was made in August 2014, and there have two public comment periods (including one that just ended last month). This should be added to this section.
- **7th line:** Add “the” before BLM.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 1102:**

(Section 5.3.12.1.1.6, Pages 5-470 and 5-471)

*This species is no longer a candidate species, so this section should be deleted.*

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 1103:**

(Section 5.3.12.1.1.7, Pages 5-471 to 5-473)

**General Comment:** Please correct the spelling of “Mojave” (it is only spelled with an “H” when referring to the county name).

**Listing History and Status**

- The recovery plan was revised in 2011 – please update this.
- **6th line:** Insert “(HCP)” after “Habitat Conservation Plan”.

**Designated Critical Habitat:**

- **1st sentence:** The acronyms “BLM” and “USFWS” have already been defined in Chapter 5, so don’t do so again here.
- **1st sentence:** Replace Utah School and Institutional Trust Lands Administration” with “SITLA”
- **6th/7th lines:** Please correct the orientation of the beginning parenthesis for the Nature Conservancy citation.

**UDWRe Response:**

The suggested edits have been incorporated.

**BLM Comment 1104:**

(Section 5.3.12.1.1.8, Page 5-473)

**Life History and Ecology:**

- **3rd line in 1st paragraph:** Insert “L” into the USFWS citation.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1105:**

(Section 5.3.12.1.1.9, Page 5-474)

*Yuma clapper rail was split from other clapper rails in 2014 – those other rails were designated as a full species now and named Ridgway’s rail. Please revise this discussion on Yuma clapper rail accordingly.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1106:**

(Section 5.3.12.1.2, Page 5-474)

**Section heading:** Please revise to be “Sensitive Species and Wildlife Species of Concern”. This is a better summary of all the different categories that are addressed in this section.

**1st sentence:** Rewrite middle of sentence to read “... that encompass the LPP project area (including the alternative alignments) or have been recorded ...”

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.**

**Text has been added to Section 5.3.12.1.2 to address the second paragraph of the above comment.**

**BLM Comment 1107:**

(Table 5-112, Pages 5-475 to 5-477)

*It appears that an outdated sensitive species list is being used for the Arizona Strip BLM. The up-to-date list is from Dec.2010.*

*The following comments refer to Table 5-112:*

**Mammals**

- Allen’s big-eared bat is BLM Sensitive in Arizona.
- Delete “bat” after Fringed myotis.
- Greater western mastiff bat is BLM Sensitive in Arizona
- Long-eared myotis is not BLM Sensitive in Arizona (not sure if it is in Utah – check this). If it’s not, delete from the table (and the subsequent text).
- Spotted bat is BLM Sensitive in Arizona

- *Spotted bat should be highlighted as having a project nexus.*
- *Townsend's big-eared bat is BLM Sensitive in Arizona*
- *Cave myotis should be added to the table and is BLM Sensitive in Arizona.*
- *Arizona myotis should be added to the table and is BLM Sensitive in Arizona.*

#### **Birds**

- *Bald eagle is BLM Sensitive in Arizona*
- *Burrowing owl is BLM Sensitive in Arizona.*
- *Ferruginous hawk is BLM Sensitive in Arizona.*
- *Fulvous whistling duck should be removed from the table (occurs nowhere near the project area).*
- *Golden eagle is BLM Sensitive in Arizona.*
- *Leconte's thrasher is BLM Sensitive in Arizona, but should not be highlighted (no project nexus).*
- *The heading "Amphibians" is in the wrong place (in the middle of the birds section).*
- *Northern goshawk is BLM Sensitive in Arizona.*
- *Peregrine falcon – add "-S" after "BLM" in 3rd column.*
- *Pinyon jay is BLM Sensitive in Arizona.*
- *Sage sparrow was split and is now named "Sagebrush sparrow".*
- *Western grasshopper sparrow should not be highlighted (no project nexus).*

#### **Reptiles**

- *Northern sagebrush lizard is not BLM Sensitive in Arizona (not sure if it is in Utah – check this). If it's not, delete from the table (and the subsequent text).*

*Add "Amphibian" heading here (page 5-477),*

*Northern leopard frog should be added to the table and is BLM Sensitive in Arizona.*

#### **Notes section**

- *Please correct the acronym for Arizona Game & Fish Dept. (it should be "AGFD").*
- *Please correct the source for the BLM Arizona sensitive species – it should be Instruction Memorandum No. AZ- 2011-005, issued December 22, 2010.*

#### **UDWRe Response:**

**The text has been revised to address the comment.**

#### **BLM Comment 1108:**

*(Table 5-112, Pages 5-475 to 5-477)*

*On table page 2 of 3, the word "amphibians" is misplaced among the birds.*

#### **UDWRe Response:**

**The suggested edit has been incorporated.**

#### **BLM Comment 1109:**

*(Section 5.3.12.1.2.1, Page 5-477)*

*Correct/change heading name to be to be "Sensitive Species and Wildlife Species of Concern".*



**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1100:**

*(Table 5-113, Pages 5-478 to 5-481)*

*Add species category headings into the table – for example, “Mammals” and “Birds”.*

*Make the appropriate changes to BLM sensitive species identified in Comment 1107 on Table 5-112.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1111:**

*(Table 5-113, Page 5-478)*

*House Rock Valley Chisel-toothed Kangaroo Rat: In the Habitat Requirements column, delete “the” before “House Rock Valley”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1112:**

*(Table 5-113, Pages 5-478 to 5-481)*

*Please add pygmy rabbit to this list. No potential. Never been observed in this area. Soils are not conducive to burrowing. Long-billed curlew as well is a stretch.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1113:**

*(Table 5-113, Pages 5-478 to 5-481)*

*Blue grouse was not highlighted in Table 5-112, so why is that species not included in Table 5-113?*

**UDWRe Response:**

**Table 5-113 has been revised to include Blue Grouse.**

**BLM Comment 1114:**

*(Table 5-113, Page 5-479)*

*Delete “dusky grouse” ... this species is not included in Table 5-112.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1115:**

*(Table 5-113, Page 5-480)*

**Flammulated owl:** *In the Habitat Requirements column, change “will” to “would”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1116:**

*(Table 5-113, Page 5-481)*

**Northern goshawk:** *Should be deleted from this table since there is a project nexus and appears further in the document on page 5-488.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1117:**

*(Table 5-113, Page 5-481)*

*There are additional species that were not highlighted in Table 5-112 so should be included here in Table 5-113. These species are:*

- desert iguana*
- desert night lizard*
- Mohave rattlesnake*
- speckled rattlesnake.*

**UDWRe Response:**

**Table 5-113 includes the above listed species.**

**BLM Comment 1118:**

*(Table 5-113, Page 5-481)*

**Western toad:** *Move this information to an “Amphibians” section at the end of this table.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1119:**

*(Table 5-113, Page 5-481)*

**Notes section**

- Please correct the acronym for Arizona Game & Fish Dept. (it should be “AGFD”).
- Please correct the source for the BLM Arizona sensitive species – it should be Instruction Memorandum No. AZ- 2011-005, issued December 22, 2010.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1120:**

*(Section 5.3.12.1.2.2, Page 5-482)*

*Correct/change heading name to be to be “Sensitive Species and Wildlife Species of Concern”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1121:**

*(Section 5.3.12.1.2.2, Page 5-482)*

*Allen’s big-eared bat: Should be “BLM sensitive species on the Arizona Strip.”*

*Big free-tailed bat: This species is also an AGFD Wildlife Species of Concern” (at least according to Table 5-112), and is no longer a BLM sensitive species on the Arizona Strip (so delete that).*

*Dwarf shrew: 10th line – should be “Southeast Corner Alternative” (not “South Alternative”).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1122:**

*(Section 5.3.12.1.2.2, Page 5-483)*

*Delete “Bat” after Fringed myotis (in heading). This species is no longer a BLM sensitive species on the Arizona Strip (so delete that).*

**UDWRe Response:** (MWH and MWH subconsultant)

**The suggested edit has been incorporated.**

**BLM Comment 1123:**

*(Section 5.3.12.1.2.2, Page 5-483)*

*Species accounts for cave myotis and Arizona myotis should be added.*

**UDWRe Response:**

**Species accounts have been added.**

**BLM Comment 1124:**

(Section 5.3.12.1.2.2, Page 5-483)

*Greater western mastiff bat* is not just found in the Sonoran Desert. Thus, please replace the second sentence with: “These bats are found from central California into most of Arizona and some areas of Texas and New Mexico and into Mexico. Ideal habitat for this bat must have large open area with roost sites having vertical faces. They will roost in small colonies in rock fissures in high cliff faces. Because of their large size, they need at least 20 feet of vertical drop from their roosts to gain enough speed for flight. If they end up on the ground, they have to climb up a vertical surface in order to gain enough height to launch into flight. (Arizona-Sonoran Desert Museum 2016).”

Citation: Arizona-Sonora Desert Museum. 2016. Animal Fact Sheet: Greater Western Mastiff Bat. Available at: [http://www.desertmuseum.org/kids/bats/greater\\_mastiff\\_bat.php](http://www.desertmuseum.org/kids/bats/greater_mastiff_bat.php) . Accessed February 4, 2016.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1125:**

(Section 5.3.12.1.2.2, Page 5-483)

*Kit fox*: Why is “Highway” in all caps (on line 10)? Please correct this.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1126:**

(Section 5.3.12.1.2.2, Page 5-483)

*Long-eared myotis*: If this is not a sensitive species in Utah, delete this section. (It is not a BLM sensitive species in AZ.)

**UDWRe Response:**

**The long-eared myotis is a BLM Sensitive Species in the Arizona Strip.**

**BLM Comment 1127:**

(Section 5.3.12.1.2.2?, Page 5-476?)

Delete “Bat” after Long-eared myotis.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1128:**

(Section 5.3.12.1.2.2?, Page 5-484)

Small-footed myotis:

- Delete “Bat” after “”Myotis” in section heading.
- **1st sentence:** This is no longer a BLM sensitive species in Arizona (so delete that); it is, however, an AGFD Wildlife Species of concern.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1129:**

(Section 5.3.12.1.2.2, Page 5-484)

**Townsend’s Big-eared Bat:** This a BLM sensitive species on the Arizona Strip, so please add that to the first sentence.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1130:**

(Section 5.3.12.1.2.2, Page 5-485)

Abert’s towhee:

- **8th line:** Insert “at its” before “maximum in March ...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1131:**

(Section 5.3.12.1.2.2, Page 5-485)

Bald Eagle:

- **4th/5th lines:** Should read “... Kane and Washington counties, an Arizona Game and Fish Department species of wildlife concern, and a BLM sensitive species on the Arizona Strip.”
- **Line 16:** Add “although some have been observed on the Arizona Strip in winter” after the AHDMS citation.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1132:**

(Section 5.3.12.1.2.2, Pages 5-486 and 5-487)

Burrowing owl:

- **1st sentence:** Should read “... bird of conservation concern, and a BLM sensitive species on the Arizona Strip.”
- **9th line:** Should be “1980s” (no apostrophe).

- *There have been sightings of burrowing owls along Highway 89 a few miles east of Kanab; and in Wildband Valley and Bulrush Point south of the Kaibab-Paiute Reservation. Please add this to this section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1133:**

*(Section 5.3.12.1.2.2, Page 5-487)*

*Ferruginous hawk: Add information on this species (which is a BLM Arizona sensitive species).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1134:**

*(Section 5.3.12.1.2.2, Page 5-487)*

**Golden eagle:**

- *Add that this is a BLM sensitive species on the AZ Strip.*
- *Add to end of section: “; sightings of golden eagles have been recorded in the area of potential effect.”*

**UDWRe Response:**

**The text has been revised to address the comment. The results of the 2011 raptor nest survey are included.**

**BLM Comment 1135:**

*(Section 5.3.12.1.2.2, Page 5-487)*

*Delete Leconte’s thrasher paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1136:**

*(Section 5.3.12.1.2.2, Page 5-488)*

*Loggerhead shrike is not BLM Sensitive on the Arizona Strip.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1137:**

*(Section 5.3.12.1.2.2, Page 5-488)*

*The goshawk does not have potential to nest along the Paria or Virgin rivers unless one is speaking of elevations above 8000 ft. They are a mixed conifer/aspen nesting bird—not willow and tamarisk. They are however confirmed winter residents along the Buckskin mountain area of Utah/Arizona.*

**UDWRe Response:**

**The statement suggests a potential nesting in the Paria River. Therefore, the text is unchanged.**

**BLM Comment 1138:**

*(Section 5.3.12.1.2.2, Page 5-489)*

***Peregrine falcon:** Add that this is a BLM Arizona sensitive species.*

***Line 8:** should be a comma after “optimal habitat,” not a semi-colon.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1139:**

*(Section 5.3.12.1.2.2, Page 5-489)*

*There is a very active eyrie just to the north of the project area in an area known as flag point in Kane County on the GSENM. This is very near where the proposed Water Treatment Facility is on the map. This is roughly also near the end of the newly constructed deer fence. Monument biologist can provide information.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1140:**

*(Section 5.3.12.1.2.2, Page 5-489)*

*Given that pinyon jays are listed as sensitive on BLM lands and given the potential to impact this species in pinyon-juniper habitat, the natural history for this species should be beefed up.*

*Also, add that this species is common across than just the UT/AZ border – more like across southern Utah and northern Arizona.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1141:**

*(Section 5.3.12.1.2.2, Page 5-490)*

*Change sage sparrow to sagebrush sparrow.*



**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1142:**

*(Section 5.3.12.1.2.2, Pages 5-490 and 5-491)*

*Western grasshopper sparrow would be an extremely rare transient in the project area and probably doesn't need to be included in the discussion.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1143:**

*(Section 5.3.12.1.2.2, Page 5-491)*

**Gila monster:**

- *Delete 2nd sentence (it is not a BLM AZ sensitive species).*
- *Add the following to the end of the section: "The species has also been observed in Kanab City." (BLM staff saw three juveniles there in 1999.)*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1144:**

*(Section 5.3.12.1.2.2, Page 5-491)*

*According to Utah BLM-SGFO map data, there is a confirmed Gila monster sighting record at UTM: 289792 / 4102990 which is < 5 km southwest from the proposed Hurricane Cliffs forebay reservoir, and 3 records at/near UTM: 291672 / 4112269 which are < 2.3 km northeast of Sand Hollow reservoir. Gila monsters are a Utah BLM Sensitive Species, and likely occupy habitats within the proposed Hurricane Cliffs reservoirs/Sand Hollow hydro system project areas.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1145:**

*(Section 5.3.12.1.2.2, Page 5-491)*

***Northern sagebrush lizard:** Not a BLM sensitive species in Arizona. Is it in Utah? If not, delete this section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1146:**

*(Section 5.3.12.1.2.2, Page 5-493)*

*Arizona toad: On line 7, correct the name of “Arizona Game and Fish Department.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1147:**

*(Section 5.3.12.1.2.2, Page 5-493)*

*Add section for Northern Leopard Frog.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1148:**

*(Section 5.3.12.2, Page 5-494)*

*2nd line: Should read “candidate wildlife species, sensitive species and species of concern, and tribal ...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1149:**

*(Section 5.3.12.2.1.1, Page 5-494)*

*2nd/3rd lines: ESA acronym has already been defined in Ch. 5, so don’t redefine it here.*

*2nd bullet: Explanation of this determination is not completely accurate. If impacts are “beneficial” then this determination “category” applies. Add that here.*

*2nd paragraph after bullet list, 3rd line: In this usage, spelling should be “effect” (not “affect”).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1150:**

*(Section 5.3.12.2.1.2, Page 5-495)*

*Correct/change heading name to be to be “Sensitive Species and Wildlife Species of Concern”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1151:**

*(Section 5.3.12.2.2, Page 5-495?)*

*Do not have a section on “Potential Effects and Alternatives Eliminated from Further Analysis.”  
Instead, organize this entire analysis the way the other resource sections are:*

**5.3.12.2.2 Proposed Action**

- 5.3.12.2.2.1 *Threatened, Endangered and Candidate Spp. Construction Effects  
Operations and Maintenance Effects  
Effects Determination*
- 5.3.12.2.2.2 *Sensitive Species and Species of Concern Construction Effects  
Operations and Maintenance Effects  
Effects Determination*

**5.3.12.2.3 Existing Highway Alternative**

- 5.3.12.2.3.1 *Threatened, Endangered and Candidate Spp. Construction Effects  
Operations and Maintenance Effects  
Effects Determination*
- 5.3.12.2.3.2 *Sensitive Species and Species of Concern Construction Effects  
Operations and Maintenance Effects  
Effects Determination*

**5.3.12.2.4 Southeast Corner Alternative**

- 5.3.12.2.4.1 *Threatened, Endangered and Candidate Spp. Construction Effects  
Operations and Maintenance Effects  
Effects Determination*
- 5.3.12.2.4.2 *Sensitive Species and Species of Concern Construction Effects  
Operations and Maintenance Effects  
Effects Determination*

**5.3.12.2.5 No Lake Powell Water Alternative**

- 5.3.12.2.5.1 *Threatened, Endangered and Candidate Spp. Construction Effects  
Operations and Maintenance Effects  
Effects Determination*
- 5.3.12.2.5.2 *Sensitive Species and Species of Concern Construction Effects  
Operations and Maintenance Effects  
Effects Determination*

**5.3.12.2.6 No Action Alternative**

- 5.3.12.2.6.1 *Threatened, Endangered and Candidate Spp. Construction Effects  
Operations and Maintenance Effects  
Effects Determination*
- 5.3.12.2.6.2 *Sensitive Species and Species of Concern Construction Effects  
Operations and Maintenance Effects  
Effects Determination*

*The “effects determination” sub-section for each alternative would then discuss the overall effects of each alternative (which is what will go into the Biological Assessment). Thus, all of the text in Sections 5.3.12.2.1 through 5.3.12.2.8 would be merged into the overall analysis of impacts by alternative, and each statement on “potential effects from LPP Project” features*

being “eliminated from further analysis” (current Sections 5.3.12.2.2.1 through 5.3.12.2.2.3) would be deleted.

*Note: There are no “transmission line alternatives” (currently Section 5.3.12.2.6) ... construction and operation of transmission lines is built into each of the separate alternatives, so the analysis of effects should be included in the overall discussion by alternative.*

**UDWRe Response:**

**The text has been revised to address the coment.**

**BLM Comment 1152:**

*(Section 5.3.12.2.3.1, Page 5-497)*

**California condor**

**Construction Effects**

- **1st paragraph, line 2:** Rewrite to read “they regularly fly over the area of potential effect. Condors that may ...”
- **2nd paragraph, 7th line:** End of line should read “... remediation would be implemented in all construction areas.”
- **2nd paragraph, 8th line:** Why would firearms be prohibited ... is it because of the lead from bullets?
- **3rd paragraph:** Delete “primary” ... there is no “primary” reintroduction site ... just “reintroduction sites”.
- **4th paragraph, 7th line:** Explain why no effect on critical habitat (because none exists in or near the project area).
- **5th paragraph, 1st line:** End of line should read “... 1,452 acres within the area”.
- **5th paragraph, 2nd/3rd lines:** Should read “... vast area available to condors for foraging in the region ...”
- **5th paragraph, last sentence:** Explain why effects would be minimal and not significant.

**Operation Effects**

- **2nd paragraph, lines 2-3:** Use “OHV” versus “ORV”.
- **2nd paragraph, 2nd line:** Please note that it may not be possible to actually close routes due to the terrain/vegetation. So don’t build this into the analysis.

**UDWRe Response:**

**The text has been revised to address the coment.**

**BLM Comment 1153:**

*(Section 5.3.12.2.3.1, Page 5-498)*

**Mexican spotted owl**

**Construction Effects**

- **Line 2:** Delete “preferred”.
- **Overall comment:** This analysis is really lacking in detail. Please provide more analysis.

**UDWRe Response:**

**Additional analyses have been included. The text has been revised to address the comment.**

**BLM Comment 1154:**

*(Section 5.3.12.2.3.1, Pages 5-498 and 5-499)*

**Southwestern willow flycatcher**

**Construction Effects**

- **Last line of 1st paragraph:** Replace “should” with “would”.
- **3rd paragraph, 3rd line:** Please explain why the Proposed Action features at the Paria River crossing would not change human activity in the area. Seems to me like it would, at least in the short-term (during construction). Please explain this more.

**Effects Summary** – change to “Effects Determination”

- This would more appropriately be “may affect, not likely to adversely affect”.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1155:**

*(Section 5.3.12.2.3.1, Page 5-499)*

**Utah prairie dog:** If truly no effect, why did we not say there was no project nexus, and then dismiss it up front (in Table 5- 113)?

**UDWRe Response:**

**The IPaC for Kane and Washington County lists the Utah prairie dog as a species that may occur or could potentially be affected by activities in Kane County. The Utah prairie dog is not found in table 5-113 or 5-112. It has been re-inserted in table 5-111 for Kane County then excluded from further analyses in 5.3.12.1.1. It has also been removed from the rest of the Final Study Report and Chapter 5 of Exhibit E.**

**BLM Comment 1156:**

*(Section 5.3.12.2.3.1, Page 5-497)*

**Yellow-billed cuckoo**

**Construction Effects**

- **2nd line on page:** Replace “would be” with “is”.

**Operation and Maintenance Effects**

- **1st paragraph:** Need to explain why this would result in no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1157:**

(Section 5.3.12.2.3.1, Page 5-500)

*The greater sage grouse section should be moved from this section since it's not a listed species.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1158:**

(Section 5.3.12.2.3.1, Page 5-500)

*Spell out MDT (Mojave Desert tortoise) no other species names are abbreviated.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1159:**

(Section 5.3.12.2.3.1, Page 5-500)

**Mojave Desert Tortoise**

- Correct spelling of "Mojave".

**Construction Effects**

- **1st line:** Delete "MDT" (don't use this acronym – write out desert tortoise throughout this discussion).

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1160:**

(Section 5.3.12.?, Pages 5-500 to 5-504)

*Habitat Conservation Plan (HCP), take areas do not apply to BLM lands, however, U.S. Fish and Wildlife Service could take the tortoise within the project area and process it through the HCP (screen it for disease and transplant it in Zone 4).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1161:**

(Sections 5.3.12.? to 5.3.12.?, Pages 5-500 to 5-504)

*Mojave desert tortoise (MDT) typically hibernate from October through February, and are active/may be observed outside of burrows mid-March through October, with primary activity occurring mid-March through May. Therefore, any project construction, operation, or maintenance activity during mid-March through October in MDT habitat (e.g., Hurricane Cliffs/Sand Hollow regions) needs to be closely monitored by qualified tortoise biologist(s), and vehicle traffic/speed effectively managed to reduce risks of MDT injury/death.*

**UDWRe Response:**

**Section 5.3.12.3.8.1 has been revised as follows:**

**“A qualified desert tortoise biologist would be retained and work on site for all construction activities in Mojave desert tortoise habitat, whether previously surveyed as occupied or unoccupied.”**

**BLM Comment 1162:**

*(Section 5.3.12.2.3.1, Page 5-502)*

**Mojave Desert Tortoise**

**Construction Effects**

- *3rd line of 2nd complete paragraph on page: Delete “Utah” (SITLA doesn’t exist in any other state).*
- *3rd line of 2nd complete paragraph on page: The acronym “HCP” has already been defined in Chapter 5, so don’t do so again here.*
- *1st line of last paragraph on page: Replace “should” with “would”.*
- *3rd line of last paragraph on page: “Desert Tortoise Council 1999” citation is not listed in the references list in Sec. 5.3.12.6. Please add it.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1163:**

*(Figure 5-158, Page 5-503)*

*This does not appear to be the correct figure – it does not show what it is supposed to (desert tortoise habitat). Please insert the correct figure.*

**UDWRe Response:**

**Figure 5-158 shows locations of desert tortoise habitat indications during the 2010 survey.**

**BLM Comment 1164:**

*(Section 5.3.12.2.3.1, Page 5-504)*

**Mojave Desert Tortoise**

**Construction Effects**

- *Please add a blank line between the 1st and 2nd complete paragraphs on the page.*
- *2nd complete paragraph on page: How much habitat would be permanently affected? Please add that here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1165:**



(Section 5.3.12.2.3.1, Page 5-504)

*Relict leopard frog: If truly no effect, why did we not say there was no project nexus, and then dismiss it up front (in Table 5-113)?*

**UDWRe Response:**

**This was done to follow the development of the text.**

**BLM Comment 1166:**

(Section 5.3.12.2.3.1, Page 5-504)

*Prior to construction/filling the Hurricane Cliffs forebay and afterbay reservoirs, Recommend that an interagency team of wildlife biologists knowledgeable in MDT ecology survey the sites (e.g., Ann McLuckie-UDWR; Cameron Rogan-WA-CO- UT; Nathan Brown-USFWS; John Kellam/Bob Douglas-Utah BLM SGFO).*

**UDWRe Response:**

**Refer to the response to BLM Comment 1161.**

**BLM Comment 1167:**

(Section 5.3.12.2.3.1, Page 5-505)

**Yuma clapper rail**

**Construction Effects**

- **3rd line:** Rewrite middle of line to read “... County. Actions associated with the Proposed Action ...”
- **Last sentence:** Need to explain why this would result in no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1168:**

(Section 5.3.12.2.3.2, Page 5-505)

*Change section heading to “Sensitive Species and Species of Concern”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1169:**

(Section 5.3.12.2.3.2, Page 5-505)

*Special-status mammals should be given species-specific effects analysis rather than lumped together. Effects should be quantifiable where possible and significance criteria defined. The effects analysis is perfunctory.*

**UDWRe Response:**

**Final Study Report 13 – Special Status Wildlife Species was prepared in accordance with the study plan approved by FERC.**

**BLM Comment 1170:**

*(Section 5.3.12.2.3.2, Page 5-505)*

**Construction Effects**

• **2nd paragraph, 1st line:** *This acreage figure likely varies by species – need to specify this BY INDIVIDUAL SPECIES (which is another reason each species should have its own distinct section).*

• **2nd paragraph, 2nd line:** *This statement about there being a “large area of equivalent habitats surrounding the area of potential effect” is not necessarily true. In some cases, the suitable habitat for a particular species may be very limited in and around the APE.*

*Need a separate analysis by species.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**BLM Comment 1171:**

*(Section 5.3.12.2.3.2, Pages 5-506 and 5-507)*

*Special-status birds should also be given species-specific effects analysis rather than lumped together. Effects should be quantifiable where possible and significance criteria defined.*

*The proposed action has the potential to significantly affect nesting areas for burrowing owls and ferruginous hawks on the Arizona Strip, especially along the pipeline route through undisturbed habitat south of the Kaibab-Paiute Reservation.*

*Has this route been surveyed for these species? Operating outside the nesting season may limit direct disturbance but if burrows or nest trees are impacted by construction is there a plan for mitigating these impacts?*

*There are also potential effects to golden eagles and peregrine falcons in the Little Creek Mesa and Hurricane Cliff areas of the pipeline route.*

*The effects analysis is perfunctory.*

**UDWRe Response:**

**Refer to Appendix E - 2012 Nesting Raptor Survey Report in Study Report 13 - Special Status Wildlife Resources and revised section Birds – Construction effects - Refer to response to BLM Comment 1169.**

**BLM Comment 1172:**

*(Section 5.3.12.2.3.2, Pages 5-506 and 5-507)*

**Birds**

**General comment:** *There should be individual sections/ discussions for each species (just as there is for the T&E species section).*

**Construction Effects**

- **1st paragraph, 6th line:** Delete “bald and” – bald eagles do not nest in this area (they are winter migrants only).
- **1st paragraph, 9th line:** these species would also be at risk of having burrows/nest sites crushed. Please add that.
- **1st paragraph, 10th line:** End of line should read “... and effects on sensitive birds and wildlife species of concern ...”
- **1st paragraph, 10th/11th lines:** Effects on at least some species (particularly burrowing owls) would not be minimal. Since they are a relatively rare species on the AZ Strip, and the proposed action alignment would go right through one of the few areas where they have been documented, the effects would be at least moderate. Please change this.
- **2nd paragraph:** Protection and mitigation measures such as what? And what would these do to special status birds?
- **3rd paragraph:** This statement is not true, at least for burrowing owls. There is not a large area of equivalent habitat surrounding the APE. Effects would at least be moderate. Please correct this statement.

**Operation and Maintenance Effects**

- **5th line:** This assertion that access would not affect birds is not accurate – there would be at least some disturbance just from the presence of humans.  
According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called “minimal”. Please add this to the analysis.

**Effects Summary**

- Effects may not be significant, but they could still be moderate (see above comments).
- **2nd line:** Should read “effects on avian sensitive species or species of concern.”

**UDWRe Response:**

**Refer to the response to BLM Comment 1169 - Refer to section 5.3.12.3 Protection, Mitigation and Enhancement Measures.**

**The suggested edits from the first, third and last bullets of the above comment have been incorporated.**

**BLM Comment 1173:**

*(Section 5.3.12.2.3.2, Page 5-507)*

*Special-status reptiles and amphibians should also be given species-specific effects analysis rather than lumped together. Effects should be quantifiable where possible and significance criteria defined.*

*The effects analysis is perfunctory.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**BLM Comment 1174:**

*(Section 5.3.12.2.3.2, Page 5-507)*

**Reptiles**

**General comment:** *There should be individual sections/ discussions for each species (just as there is for the T&E species section).*

**Construction Effects**

- **2nd sentence:** *DELETE – this assessment is totally incorrect (at least for the Arizona Strip, where the proposed pipeline alignment would traverse through previously undisturbed areas).*
- **Last sentence:** *This sentence is vague and unsubstantiated. 1,400+ acres of habitat is not an insignificant amount. Which habitat(s) would be disturbed, and which of the species would be affected by each area of lost habitat? There is not enough analysis here.*

**Operation and Maintenance Effects**

- *This so-called analysis is very vague and doesn't really say anything. If effects can't be quantified, then how can the assertion be made that populations of relatively rare species would not be placed at risk? This needs much more analysis.*

*In addition, human presence can certainly cause disturbance. According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called "minimal". Please add this to the analysis.*

**Effects Summary**

- *This is an unsubstantiated assertion.*
- **2nd line:** *Should read "effects on reptile sensitive species or species of concern."*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits from the first and last bullets of the above comment have been incorporated.**

**BLM Comment 1175:**

*(Section 5.3.12.2.3.2, Pages 5-507 and 5-508)*

**Amphibians**

**General comment:** *There should be individual sections/ discussions for each species (just as there is for the T&E species section).*

**Construction Effects**

• **Last 2 sentences:** *There is not enough analysis here. For example, impacts would not really be similar to those on reptiles because the habitat for amphibians is much more restricted. Need to provide more explanation on why effects would be minimal (tie it directly to habitat disturbance, along with crushing).*

**Effects Summary**

• **2nd line:** *Should read “effects on avian sensitive species or species of concern.”*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edit from the last bullet of the above comment has been incorporated.**

**BLM Comment 1176:**

*(Section 5.3.12.2.3.3, Page 5-508)*

**1st sentence:** *Should read “Wildlife species listed under the ESA, sensitive species, and wildlife species of concern include ...”*

**2nd sentence:** *Should read “... federally listed species and wildlife species of concern have been ...”*

**7th line:** *Should read “... federally listed, considered sensitive, or considered species of concern by the federal government or state agencies.”*

**Construction Effects**

• **Last 2 sentences:** *There is not enough analysis here. For example, 1,400+ acres of habitat may not be an insignificant amount for some species. Which habitat(s) would be disturbed, and which of the species would be affected by each area of lost habitat? There is not enough analysis here.*

**Operation and Maintenance Effects**

• *This so-called analysis is very vague and doesn’t really say anything. It acknowledges there would be mortality of individuals, but then states that no species would be placed at risk. With the lack of analysis, how is this conclusion made?*

*In addition, human presence can certainly cause disturbance. According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called “minimal”. Please add this to the analysis.*

**Effects Summary**

*Based on the above points, this conclusion is not supported.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits from the first, second and third paragraphs of the above have been incorporated.**

**BLM Comment 1177:**

*(Section 5.3.12.2.4.1, Page 5-508)*

**California condor**

**Construction Effects**

*Please rewrite to read “Effects would be similar to those described in Section 5.3.12.2.3.1, except that 1,134 acres would be permanently disturbed. Of this, much would occur in previously disturbed areas since the pipeline alignment in the vicinity of the Kaibab-Paiute Indian Reservation would be sited along an existing highway rather than in previously-disturbed areas south of the reservation.”*

**Operation and Maintenance Effects**

*Please rewrite to read “Effects would be the same as described in Section 5.3.12.2.3.1, except for where the pipeline alignment crosses through the Kaibab-Paiute Indian Reservation. In this area, the pipeline would be sited along an existing highway rather than in more remote areas south of the reservation that receive very light visitation and human disturbance. Thus, no new disturbance to wildlife from operation and maintenance activities would occur under the Existing Highway Alternative because the area receives regular traffic from cars and even heavy trucks traveling the highway.”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1178:**

*(Section 5.3.12.2.4.1, Page 5-509)*

**Mexican spotted owl**

**Construction Effects**

*While there may be no adverse effects to the species, the impacts would not be identical to Proposed Action. This pipeline alignment would be further away from foraging habitat in and around Kanab Creek. Please acknowledge that.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1179:**

*(Section 5.3.12.2.4.1, Page 5-509)*

*The effects to southwestern willow flycatcher are described as the same as Section 5.3.12.2.3.1, however the conclusion in the summary is different from Section 5.3.12.2.3.1.*

**UDWRe Response:**

The effects summary has been revised to:

**“The South Alternative may effect but would not adversely affect the southwestern willow flycatcher or designated critical habitat.” This is due to the inclusion of the Paria River CH.**

**BLM Comment 1180:**

*(Section 5.3.12.2.4.1, Page 5-510)*

**Mojave Desert Tortoise**

*Please correct the spelling of “Mojave” (two places) – it is only spelled with an “H” when referring to the county name.*

**Construction Effects**

*Delete 2nd sentence – it is irrelevant because Highway 389 does not travel through tortoise habitat.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1181:**

*(Section 5.3.12.2.4.2, Page 5-511)*

**Section heading:** *Please revise to be “Sensitive Species and Wildlife Species of Concern”.*

**Mammals**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

- **2nd line:** *Insert “except that” before “construction of the penstock”.*
- **2nd and 3rd sentences:** *While this alternative would have less impacts than the Proposed Action, there is an inadequate analysis to support this conclusion.*

**Operation and Maintenance Effects**

- *Disagree that impacts would be the same as for Proposed Action. Thus, please rewrite to read “Effects would be the same as described in Section 5.3.12.2.3.2, except for where the pipeline alignment crosses through the Kaibab-Paiute Indian Reservation. In this area, the pipeline would be sited along an existing highway rather than in more remote areas south of the reservation that currently receive very light visitation and human disturbance. Thus, no new disturbance to sensitive species and wildlife species of concern from operation and maintenance activities would occur under the Existing Highway Alternative because the area receives regular traffic, including heavy trucks, traveling the highway.”*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits for the first paragraph and first bullet have been incorporated.**



**BLM Comment 1182:**

*(Section 5.3.12.2.4.2, Page 5-511)*

**Birds**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

- **1st line:** Insert “except that” before “construction of the penstock”.
- **2nd and 3rd sentences:** *While this alternative would have less impacts than the Proposed Action, there is an inadequate analysis to support this conclusion.*

**Operation and Maintenance Effects**

- *Disagree that impacts would be the same as for Proposed Action. Thus, please rewrite to read “Effects would be the same as described in Section 5.3.12.2.3.2, except for where the pipeline alignment crosses through the Kaibab-Paiute Indian Reservation. In this area, the pipeline would be sited along an existing highway rather than in more remote areas south of the reservation that receive very light visitation and human disturbance. Thus, no new disturbance to sensitive species and wildlife species of concern from operation and maintenance activities would occur under the Existing Highway Alternative because the area receives regular traffic, including heavy trucks, traveling the highway.”*

**Effects Summary**

- **2nd line:** *Please rewrite to read “significant effects on avian sensitive species and species of concern.”*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits for the first and last bullets have been incorporated.**

**BLM Comment 1183:**

*(Section 5.3.12.2.4.2, Page 5-512)*

**Reptiles**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

- **1st line:** Insert “except that” before “construction of the penstock”.
- **2nd and 3rd sentences:** *While this alternative would have less impacts than the Proposed Action, there is an inadequate analysis to support this conclusion.*

**Operation and Maintenance Effects**

- *Disagree that impacts would be the same as for Proposed Action. Thus, please rewrite to read “Effects would be the same as described in Section 5.3.12.2.3.2, except for where the pipeline alignment crosses through the Kaibab-Paiute Indian Reservation. In this area, the pipeline would be sited along an existing highway rather than in more remote areas south of the reservation that currently receive very light visitation and human disturbance. Thus, no new disturbance to sensitive species and wildlife species of concern from operation and maintenance activities would occur under the Existing Highway Alternative because the area receives regular traffic, including heavy trucks, traveling the highway.”*

**Effects Summary**

- **2nd line:** Please rewrite to read “significant effects on reptile sensitive species and species of concern.”

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits for the first and last bullets have been incorporated.**

**BLM Comment 1184:**

*(Section 5.3.12.2.4.2, Page 5-512)*

**Amphibians**

**General comment:** Need to have separate analysis sections for each individual species.

**Construction Effects**

- **1st line:** Insert “except that” before “construction of the penstock”.
- **1st sentence:** Explain why having the pipeline along Highway 389 would be less impacting than the overland route going south of the reservation.
- **3rd sentence:** While this alternative would have less impacts than the Proposed Action, there is an inadequate analysis to support this conclusion.

**Operation and Maintenance Effects**

- Please explain why impacts would be minimal on amphibians under this alternative.

**Effects Summary**

- **2nd line:** Please rewrite to read “significant effects on amphibian sensitive species and species of concern.”

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits for the first and last bullets have been incorporated.**

**BLM Comment 1185:**

*(Section 5.3.12.2.4.3, Pages 5-512 and 5-513)*

**Construction Effects**

- **1st line:** Insert “except that” before “construction of the penstock”.
- **3rd sentence:** While this alternative would have less impacts than the Proposed Action, there is an inadequate analysis to support this conclusion.

**Operation and Maintenance Effects**

- Disagree that impacts would be the same as for Proposed Action. Thus, please rewrite to read “Effects would be the same as described in Section 5.3.12.2.3.3, except for where the pipeline alignment crosses through the Kaibab-Paiute Indian Reservation. In this area, the pipeline would be sited along an existing highway rather than in more remote areas south of the reservation that currently receive very light visitation and human disturbance. Thus, no new disturbance to tribal

*wildlife species of concern from operation and maintenance activities would occur under the Existing Highway Alternative because the area receives regular traffic, including heavy trucks, traveling the highway.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1186:**

*(Section 5.3.12.2.5.1, Page 5-513)*

**Southwestern willow flycatcher**

**Effects Summary:** *Should be “southwestern willow flycatcher”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1187:**

*(Section 5.3.12.2.5.1, Page 5-514)*

**Mojave Desert Tortoise**

**Please correct the spelling of “Mojave” (two places) – it is only spelled with an “H” when referring to the county name.**

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1188:**

*(Section 5.3.12.2.5.2, Page 5-515)*

**Section heading:** *Please revise to be “Sensitive Species and Wildlife Species of Concern”.*

**Mammals**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

• *Effect under this alternative would be slightly less than under the Proposed Action because the alignment follows an existing large transmission line, rather than going around the Kaibab-Paiute Indian Reservation into areas that have not been disturbed. Need to acknowledge this.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edit for the first paragraph has been incorporated.**

**BLM Comment 1189:**

*(Section 5.3.12.2.5.2, Page 5-516)*

**Birds**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

• *Effect under this alternative would be slightly less than under the Proposed Action because the alignment follows an existing large transmission line, rather than going around the Kaibab-Paiute Indian Reservation into areas that have not been disturbed. Need to acknowledge this.*

**Reptiles**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

• *Effect under this alternative would be slightly less than under the Proposed Action because the alignment follows an existing large transmission line, rather than going around the Kaibab-Paiute Indian Reservation into areas that have not been disturbed. Need to acknowledge this.*

**Amphibians**

**General comment:** *Need to have separate analysis sections for each individual species.*

**Construction Effects**

• *Effect under this alternative would be slightly less than under the Proposed Action because the alignment follows an existing large transmission line, rather than going around the Kaibab-Paiute Indian Reservation into areas that have not been disturbed. Need to acknowledge this.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**BLM Comment 1190:**

*(Section 5.3.12.2.5.3, Page 5-517)*

**Construction Effects**

• *Effect under this alternative would be slightly less than under the Proposed Action because the alignment follows an existing large transmission line, rather than going around the Kaibab-Paiute Indian Reservation into areas that have not been disturbed. Need to acknowledge this.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**BLM Comment 1191:**

*(Section 5.3.12.2.6, Page 5-517)*

*There are no “transmission line alternatives” but they are part of the other alternatives. Sections 5.3.12.2.6.1 through 5.3.12.2.6.3 should be merged into the previous alternatives*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 1192:**

(Section 5.3.12.2.6.1, Page 5-517)

**California condor**

**Construction Effects**

- **1st line of 2nd paragraph:** “Electrical Transmission Lines System” should not be capitalized.
- **2nd paragraph:** Please add to the end of this paragraph “because none is present in or near the project area.”

**Operation and Maintenance Effects**

- **Last sentence of 1st paragraph:** Is this true (about electrocution of condors)? Please provide additional data.
- **1st line of 2nd paragraph:** Delete “off-road” and just say there would be “increased vehicle traffic”. Per page 5- 711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use).
- **Last sentence of 2nd paragraph:** Delete – it is unlikely that this would occur on transmission line access roads. It certainly should not be built into the impacts analysis.

**Effects Summary**

- **1st line:** “Electrical Transmission Lines System” should not be capitalized.
- Please explain how the transmission lines would be likely to adversely affect condors.

**UDWRe Response:**

**Refer to the revisions to the Operation and Maintenance Effects.**

**The suggested edits from the first, second, fourth and sixth bullets of the above comment have been incorporated.**

**BLM Comment 1193:**

(Section 5.3.12.2.6.1, Page 5-518)

**Mexican spotted owl**

**Construction Effects**

- **2nd line:** Delete “primary” ... it’s either nesting habitat or it’s not.

**Operation and Maintenance Effects**

- **2nd sentence:** The acronym “EEI” has already been defined in Chapter 5, so don’t do so again here.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1194:**

(Section 5.3.12.2.6.1, Pags 5-519 and 5-520)

**Mojave Desert Tortoise**

Please correct the spelling of “Mojave” (three places) – it is only spelled with an “H” when referring to the county name.

**Construction Effects**

- **1st line:** Delete “potential” – habitat is either designated critical or suitable, not “potential”.

**Operation and Maintenance Effects**

- Please provide more analysis ... the text currently has none. Talk about how/why the adverse effects would take place.

**UDWRe Response:**

The text has been revised to address the comment.

**BLM Comment 1195:**

(Section 5.3.12.2.6.2, Pages 5-520 to 5-522)

**Section heading:** Please revise to be “Sensitive Species and Wildlife Species of Concern”.

**Mammals**

**General comment:** Need to have separate analysis sections for each individual species.

**Construction Effects**

- **4th line:** “Electrical Transmission Lines System” should not be capitalized.

**Operation and Maintenance Effects**

• Impacts would be due to more than just vehicle collisions – also from disturbance caused by human presence. According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called “minimal”. Please add this to the analysis.

**Birds**

**General comment:** Need to have separate analysis sections for each individual species.

**Construction Effects**

- **1st paragraph, 3rd line:** Protection measures such as what?
- **1st line, 3rd line:** “Electrical Transmission Lines System” should not be capitalized.

**Operation and Maintenance Effects**

- **1st paragraph:** Explain why occasional transmission line inspection and maintenance would be unlikely to have effects. According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called “minimal”.
- **2nd paragraph, 3rd line:** The acronym “EEI” has already been defined in Chapter 5, so don’t do so again here.

**Effects Summary**

- ***1st line:*** “Electrical Transmission Lines System” should not be capitalized.

**Reptiles**

***General comment:*** Need to have separate analysis sections for each individual species.

**Construction Effects**

- ***2nd line:*** “Electrical Transmission Lines System” should not be capitalized.
- ***Need more analysis to provide rationale on why effects would be minimal.***

**Operation and Maintenance Effects**

• ***According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called “minimal”. Please address this in the analysis.***

**Effects Summary**

- ***1st line:*** “Electrical Transmission Lines System” should not be capitalized.

**Amphibians**

***General comment:*** Need to have separate analysis sections for each individual species.

**Construction Effects**

- ***1st line of 2nd paragraph:*** “Electrical Transmission Lines System” should not be capitalized.
- ***Need more analysis to provide rationale on why effects would be minimal.***

**Operation and Maintenance Effects**

• ***Need more analysis to provide rationale on why it is unlikely that any species would be placed at risk. According to page 5-711 (the Transportation section), maintenance visits to the powerlines would be ONCE PER WEEK, which would create a lot more use in the areas of the LPP alignments that are located away from Highway 89 (since those areas currently do not receive much use). Thus, disturbance to those species that are sensitive to human presence would greatly increase (as would the likelihood of being run over by vehicles, since traffic on these remote roads would increase). It is unlikely that impacts can still be called “minimal”.***

**Effects Summary**

- ***1st line:*** “Electrical Transmission Lines System” should not be capitalized.

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**The suggested edits from the first paragraph and the first, fourth, sixth, seventh, eighth, eleventh, twelfth, and fifteenth (last) bullets of the above comment have been incorporated.**

**BLM Comment 1196:**

***(Section 5.3.12.2.6.3, Page 5-522)***



**Construction Effects**

- **1st line:** “Generally the same” means similar but not the same ... what are the differences?

**Operation and Maintenance Effects**

- **1st line:** “Generally the same” means similar but not the same ... what are the differences?

**Effects Summary**

- **1st line:** “Electrical Transmission Lines System” should not be capitalized.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1197:**

*(Section 5.3.12.2.7.1, Page 5-523)*

*The conclusion in this section that the No LPP water alternative may do long-term harm to yellow-billed cuckoos and other riparian-dependent special status species along the Virgin River may not be accurate. The premise is that eliminating potable water use for outdoor landscaping would substantially reduce groundwater return flows. There is not adequate hydrologic data to back up this premise and resulting conclusion. Additional data is needed if such a statement is to be made. Much of the outdoor landscaping in Washington County, especially golf courses and residential lawns, is watered through sprinkler systems. This type of watering is wasteful in terms of high evaporation losses (especially during the hot summer months). It may also only moisten the soil to a shallow depth, with little or no deeper percolation down to strata that may then move the water back toward the Virgin River. Again, this statement appears to be biased against the No LPP water alternative in contrast with the pro-build alternatives.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1198:**

*(Section 5.3.12.2.7.1, Page 5-523)*

**California condor**

**Construction Effects**

- **2nd line of 1st paragraph:** Please rewrite to read “California condor nesting or roosting habitats ...” Condors forage just about anywhere, so no habitat is technically considered “foraging habitat”.
- **2nd paragraph:** Please add to the end of this paragraph “because none is present in or near the project area.”

**Operation and Maintenance Effects**

- **5th line:** The acronym “EEI” has already been defined in Chapter 5, so don’t do so again here.

**Effects Summary**

- Please rewrite to read “The No Lake Powell Water Alternative would not affect California condor.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1199:**

*(Section 5.3.12.2.7.1, Page 5-523)*

*BLM agrees that the No Lake Powell Water Alternative would have no effect on the Mexican spotted owl but these sections are poorly worded. Please rewrite.*

**UDWRe Response:**

**The text has not been revised.**

**BLM Comment 1200:**

*(Section 5.3.12.2.7.1, Pages 5-524 and 5-525)*

*The following statement is made in the discussion of effects to southwestern willow flycatcher and yellow-billed cuckoo:*

*“The No Lake Powell Water Alternative would likely adversely affect southwestern willow flycatcher and its designated critical habitat.”*

*But there is no description of what these effects would be or how significant they would be. Absolutely no argument is made to back up this conclusion.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1201:**

*(Section 5.3.12.2.7.1, Page 5-524)*

**Southwestern willow flycatcher**  
**Construction Effects**

• *This is confusing ... the first sentence states that NO facilities would be constructed under the No Lake Powell Water Alternative, then the next sentence says there would be effects to SWIFL ... what would those be from? Or is the first sentence saying that there WOULD be facilities built within SWIFL habitat? If so, WHAT would be constructed in habitat ... and would they be in the Virgin River floodplain? Even this alternative would need to have mitigations built in to minimize impacts on the environment, so this does not seem like a correct statement.*

*Please provide additional data to support the conclusion that this alternative would have any direct or indirect impacts on the species. Is this conclusion based upon the flawed assertion that this alternative would have long-term unavoidable adverse effects on special status species (such as the willow flycatcher) and their habitat resulting from the indirect action of restricting residential outdoor watering with potable water, which supposedly would eliminate groundwater recharge in the St. George metropolitan area?*

*This flawed assertion that eliminating residential watering would eliminate groundwater recharge also appears in other sections in Chapter 5 (Groundwater Resources-5.3.5, Wetland*

*and Riparian Resources-5.3.9, Wildlife-5.3.11, Aquatic Resources-5.3.6, and Special Status Aquatic Resources-5.3.7). This conclusion seems to directly contradict information found in at least two sources cited in the water analysis. From Section 5.13C.7.1.1 in the Lake Powell Pipeline Phase I -Preliminary Engineering and Environmental Studies. UDWR (2009) – Appendix A in the Groundwater Resources Study Report:*

*“Volumetrically, the primary flow remains northward toward the Virgin River and away from the groundwater table mound. The dominant northward flow direction precludes recharge from the Pine Valley Mountains, northwest of the reservoir area, considered the primary source of regional groundwater recharge (USGS 2000), the Hurricane Cliffs to the east, and the Virgin River to the north and west. This suggests that natural recharge in the vicinity of the reservoir occurs largely as a result of local precipitation within Sand Hollow.” (Emphasis added)*

*And on page 51 in; USGS 2000. Geohydrology and Numerical Simulation of Ground-Water Flow in the Central Virgin River Basin of Iron and Washington Counties, Utah: Utah Department of Natural Resources Technical Publication No. 116:*

*“The Navajo and Kayenta aquifers are recharged primarily by infiltration of precipitation on the Navajo Sandstone and Kayenta Formation outcrop and seepage from streams crossing the outcrop. Additional sources of recharge include seepage from overlying and underlying formations, infiltration of unconsumed irrigation water, and seepage from Gunlock Reservoir.” (Emphasis added)*

*Residential landscape watering is not mentioned in either document as a significant source of groundwater recharge. Most residential watering in the St. George area occurs from spring to fall when much of the water is absorbed by plants or lost through evapotranspiration. When areas are watered excessively some water could be available for groundwater recharge, but this would seem to be a minor contribution to the overall recharge (since it is not mentioned as a source in the USGS or UDWR studies).*

*As a reader of the PLP, we are not led to the logical conclusion that the No Lake Powell Water Alternative (or No Action Alternative) will have significant adverse impacts to riparian habitat (including habitat for southwestern willow flycatcher and yellow-billed cuckoo) based on the information provided. Further study and analysis is needed on the baseline contributions to groundwater recharge from residential landscape watering (in acre feet per year), the relative importance of this source of recharge compared to the other significant sources detailed in the cited studies, and the relationship to water flows on the Virgin and Santa Clara Rivers.*

#### **Operation and Maintenance Effects**

• Again, is this saying that no facilities would be built in SWIFL habitat, or that the No Lake Powell Water alternative WOULD have facilities in SWIFL habitat? It is unclear how there could be any effects to SWIFL habitat ... there is NO analysis here to support that conclusion.

#### **Effects Summary**

• Even if there were effects, the effects determination should be “may affect, not likely to adversely affect” SWIFL and its critical habitat.

#### **UDWR Response:**

**The text has been revised to address the comment.**

**BLM Comment 1202:**

*(Section 5.3.12.2.7.1, Page 5-524)*

*BLM agrees that the No Lake Powell Water Alternative would have no effect on the Utah prairie dog, but this section is poorly worded and lacks true analysis.*

**UDWRe Response:**

**The Utah prairie dog has been removed from the section.**

**BLM Comment 1203:**

*(Section 5.3.12.2.7.1, Pages 5-524 and 5-525)*

**Yellow-billed cuckoo**

**Construction Effects**

• As with SWIFL, this confuses me ... the first sentence states that NO facilities would be constructed under the No Lake Powell Water Alternative, then the next sentence says there would be effects to cuckoo ... what would those be from? Or is the first sentence saying that there WOULD be facilities built within cuckoo habitat? If so, WHAT would be constructed in habitat ... and would they be in the Virgin River floodplain??? Even this alternative would need to have mitigations built in to minimize impacts on the environment, so this does not seem like a correct statement.

*As a reader of the PLP, we are not led to the logical conclusion that the No Lake Powell Water Alternative (or No Action Alternative) will have significant adverse impacts to riparian habitat (including habitat for yellow-billed cuckoo) based on the information provided.*

*Further study and analysis is needed on the baseline contributions to groundwater recharge from residential landscape watering (in acre feet per year), the relative importance of this source of recharge compared to the other significant sources detailed in the cited studies, and the relationship to water flows on the Virgin and Santa Clara Rivers.*

**Effects Summary**

• Even if there were effects, the effects determination should be “may affect, not likely to adversely affect” yellow-billed cuckoo and its proposed critical habitat.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1204:**

*(Section 5.3.12.2.7.1, Page 5-525)*

*Greater sage grouse belongs in a different section – it is not a listed (or candidate) species.*

**UDWRe Response:**

**The Greater sage grouse has been removed from the section.**

**BLM Comment 1205:**

(Section 5.3.12.2.7.1, Page 5-525)

*Please correct the spelling of “Mojave” (it is only spelled with an “H” when referring to the county name).*

*The discussion of effects to the desert tortoise from the No Action alternative is severely limited, especially given that a determination of likely to adversely affect is made. No logical argument is made to defend this determination.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1206:**

*(Section 5.3.12.2.7.1, Pages 5-525 and 5-526)*

*BLM agrees that the No Lake Powell Water Alternative would have no effect on the relict leopard frog and Yuma clapper rail, but these sections are poorly worded and lack true analysis.*

**UDWRe Response:**

**The text was not revised in this section.**

**BLM Comment 1207:**

*(Section 5.3.12.2.7.2, Page 5-526)*

*Section number needs to be corrected – previous sub-section was numbered “5.3.12.2.7.1” so this logically should be “5.3.12.2.7.2”. Also, what is meant by “Sensitive Species and Wildlife Species of Concern”? (“Special status species” includes ALL special status species, including T&E. Is that what is meant here?)*

**General comment:** *Need to have separate analysis sections for each individual species. This is much too cursory an analysis. Remember that ALL alternatives need to have the same detail of analysis.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1169.**

**BLM Comment 1208:**

*(Section 5.3.12.2.7.2.1, Page 5-526)*

*Section number needs to be corrected – the impacts analysis for “No Lake Powell Water Alternative” (of which this subject sub-section is a part) is 5.3.12.2.7.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1209:**

(Section 5.3.12.3, Page 5-526)

*Why are there no mitigation measures for sensitive species and wildlife species of concern? There should be, since there are specific measures for T&E species.*

**UDWRe Response:**

**General mitigation measures include all species.**

**BLM Comment 1210:**

(Section 5.3.12.3.1, Page 5-527)

*Please add the following mitigation measure to the list under section 5.3.12.3.1:*

*“Any hollow metal and/or plastic (PVC) pipes and posts used temporarily during construction or left permanently in place would be capped to prevent birds, small mammals, or reptiles from becoming entrapped.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1211:**

(Section 5.3.12.3.1, Page 5-527)

**General Mitigation Measures**

- **1st bullet:** *We (BLM) do not use the term “periods of greatest use” ... what does that mean? Breeding season, migration periods, etc.? This would be better characterized as something like “important life cycle periods”.*
- **2nd bullet:** *What would be considered “safe speeds”? Need to be a bit more specific.*
- **7th bullet:** *Rewrite this stipulation as follows – “Construction and facility sites would be kept free of all trash, including food refuse and micro-trash. Micro-trash includes small and easily ingestible materials such as bottle caps, broken glass, cigarette butts, small plastic bits, bullets, bullet casings, and food materials. Sites would be cleaned up at the end of each day (e.g., trash removed and scrap materials picked up) to minimize potential ingestion of trash by wildlife.”*
- **9th bullet:** *Delete – limiting access on transmission line roads is not feasible, and something we (the BLM) would likely not implement.*

**UDWRe Response: (MWH and MWH subconsultant)**

**The suggested edit from the first, third, and fourth (last) bullet of the above comment has been incorporated.**

**Safe speeds would most likely vary by species.**

**BLM Comment 1212:**

(Section 5.3.12.3.1, Page 5-527)

*Pre-construction burrowing owl surveys should be completed and mitigation measures incorporated into the proposed action and in section 5.3.12.3.1 (in a sensitive species mitigation section). Refer to:*

*Burrowing Owl Survey Protocol and Mitigation Guidelines. California Burrowing Owl Consortium. April 1993.*

*BURROWING OWL PROJECT CLEARANCE GUIDANCE FOR LANDOWNERS. Arizona Burrowing Owl Working Group.*

*Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States. US Fish and Wildlife Service. Biological Technical Publication FWS/BTP-R6001- 2003.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1213:**

*(Section 5.3.12.3.3.2, Page 5-528)*

*The acronym “EEI” has already been defined in Chapter 5, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1214:**

*(Section 5.3.12.3.5.2, Page 5-529)*

*The acronym “HCP” has already been defined in Chapter 5, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1215:**

*(Section 5.3.12.3.8, Page 5-529)*

*Please correct the spelling of “Mojave” (it is only spelled with an “H” when referring to the county name).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1216:**

*(Section 5.3.12.3.8.1, Page 5-529)*

*Please correct the spelling of “Mojave” (it is only spelled with an “H” when referring to the county name).*

- **2nd bullet, 2nd line:** Delete “potential” – habitat is either designated critical or suitable, not “potential”.



- **4th bullet, 3rd line:** Delete “potential” – habitat is either designated critical or suitable, not “potential”.
- **5th bullet, 3rd line:** Delete “potential” – habitat is either designated critical or suitable, not “potential”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1217:**

*(Section 5.3.12.3.8.2, Page 5-530)*

*Please correct the spelling of “Mojave” (it is only spelled with an “H” when referring to the county name).*

- **2nd bullet, 3rd line:** Insert “and the BLM” after “biologist”.
- **2nd bullet, 5th line:** Delete “potential” – habitat is either designated critical or suitable, not “potential”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1218:**

*(Section 5.3.12.4.1, Page 5-530 and 5-531)*

*Please correct the spelling of “Mojave” (it is only spelled with an “H” when referring to the county name).*

*Add the cumulative effects of Jackson Flat Reservoir and the Fredonia Flood Retarding Structure (on Colorado Plateau Region vegetation) – this is currently lacking in this analysis.*

**3rd paragraph, 4th/5th lines:** *Cumulative effects to habitat would be longer than short-term – they would occur until the habitat is fully restored (which takes a while in the Mojave Desert). There is also loss of Mojave Desert habitat from fires, which takes many years to rehabilitate.*

**4th paragraph:** *Impacts would be longer than short-term. When combined with loss of Mojave Desert vegetation from other development and fire, the effects would be significant. And much of this loss of Mojave Desert vegetation would be permanent (not short-term) – the permanent facilities from the LPP project aren’t going away (and thus are “permanent”).*

**4th paragraph, 4th line:** *OHV acronym has already been defined in Ch. 5, so don’t redefine it here.*

**4th paragraph, 7th line:** *Please rewrite this line to read “Action effects mitigated somewhat by implementing the protection measures ...”*

**Last paragraph of section:** *Please delete this entire paragraph ... It is not relevant to this section (5.3.12) on terrestrial special status wildlife species along the Lake Powell Pipeline.*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 1219:**

*(Section 5.3.12.4.4, Page 5-532)*

*This analysis is inaccurate. When considering effects to wildlife habitat (and therefore native vegetation), we do not analyze landscaping/ornamental vegetation. In reality, the No Lake Powell Water Alternative would be **beneficial** to vegetation.*

*Thus, please rewrite this section as follows:*

*The No Lake Powell Water Alternative would have minor long-term cumulative effects on special status wildlife species and habitat in the St. George metropolitan area when combined with the St. George Water Reuse Project. Native vegetation would replace anthropogenic landscapes over time, except where residential areas would be served by secondary water for outdoor irrigation. As a result, native vegetation communities (including habitat for special status wildlife species) would increase in extent of distribution. Cumulative effects on special status wildlife species would therefore be long-term and beneficial.*

**UDWRe Response:**

**The current conditions have been established as the base line for analysis. UDWRe's view is that the text is appropriate as written,**

**BLM Comment 1220:**

*(Section 5.3.12.4.5, Page 5-532)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to vegetation under the No Action Alternative.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1221:**

*(Section 5.3.12.5.2, Page 5-532)*

*In reference to the first sentence in this sub-section, need to acknowledge that much **MORE** of this alignment would be along an existing highway (Highway 389), where much disturbance has already occurred (vs. the Proposed Action, which would have brand new disturbance). The cumulative impacts on special status wildlife habitat would therefore be quite different (Proposed Action would be much more detrimental to habitat than the Existing Highway Alternative).*

**UDWRe Response:**

**UDWRe's view is that the text is appropriate as written.**

**BLM Comment 1222:**

(Section 5.3.12.5.4, Page 5-533)

*Please explain how the No Lake Powell Water Alternative would have long-term unavoidable adverse effects on special status wildlife species and associated habitat in the St. George area? Please see Comment 1201 regarding this issue (i.e., the assertion that not having residential watering would adversely affect groundwater recharge, and therefore riparian areas along the Virgin River). Thus, please rewrite this section as follows:*

*The No Lake Powell Water Alternative would have no long-term unavoidable adverse effects on special status wildlife species and associated habitat in the LPP Project area.*

**UDWRe Response:**

**Revisions have been made to the text to address the comment.**

**BLM Comment 1223:**

(Section 5.3.12.5.5, Page 5-533)

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to vegetation under the No Action Alternative.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1224:**

(Section 5.3.12.6, Page 5-535)

*There are a number of references included in this list that are not cited in the text. Please only include those actually cited in this Special Status Wildlife Species section.*

*Also USFWS 2010g and USFWS 2010h (which ARE cited in the text) are not in this references list.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1225:**

(Section 5.3.12.6, Page 5-536)

***Updated Spotted Owl References:***

*\_\_\_\_\_. 2010b. Spotted Owl. Available on the Internet at:*

*<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B074#lifeHistory>  
11/27/2010.*

*\_\_\_\_\_. 2010c Mexican Spotted Owl Critical Habitat. Available on the Internet at:*

*[http://www.fws.gov/southwest/es/MSO/critical\\_habitat/critical\\_habitat.html](http://www.fws.gov/southwest/es/MSO/critical_habitat/critical_habitat.html).11/27/2010.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1226:**

*(Section 5.3.13, General Comment)*

*The Recreation section needs to refer to the Visual section for up-to-date information on the historic trails and scenic roads.*

**UDWRe Response:**

**References to the Visual Resources Study Report have been added to the text.**

**BLM Comment 1227:**

*(Section 5.3.13.1.1.1, Page 5-538)*

*It appears that a lot of this data is outdated by 7 to 8 years. Contractor needs to update the document data.*

**UDWRe Response:**

**Updated information has been provided where available.**

**BLM Comment 1228:**

*(Section 5.3.13, Page 5-538-577)*

*Add discussion and analysis of impacts on recreational use of the Arizona National Scenic Trail to this chapter.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1229:**

*(Section 5.3.13, Page 5-538)*

*4th line: Shouldn't this be "identified recreation needs **and opportunities** documented ..."?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1230:**

*(Section 5.3.13.1.1, Page 5-538)*

*3rd bullet in list: add "(VCNM)"*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1231:**

*(Section 5.3.13.1.1.1, Page 5-539)*

*Colorado River Discovery Rafting Tours – How is this section relevant to the Affected Environment? This operator conducts tours below the damn; however other operator's i.e. guide services operate below the damn. If one is included all Outfitting and Guiding operations will need to be included.*

*Please explain how this is relevant to the AE. Will there be impacts to economic loss OR gain for these types of businesses because of the pipeline?*

**UDWRe Response:**

**Colorado River Discovery Rafting Tours have been included only because the put-in is located in the vicinity of LPP project facilities.**

**BLM Comment 1232:**

*(Section 5.3.13.1.1, Page 5-539)*

*Colorado River Discovery Rafting Tours: seems like info. on trip numbers should be updated from 2009.*

*Highway 89: Add that this highway is also the access route from Phoenix and Flagstaff to Wahweap Marina on Lake Powell.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1233:**

*(Section 5.3.13.1.1, Page 5-540)*

*All of these sections should be updated with current info. (vs. numbers listed from 2008).*

**UDWRe Response:**

**Updated information has been provided where available.**

**BLM Comment 1234:**

*(Section 5.3.13.1.1, Page 5-540)*

*Glen Canyon Dam Overlook: 1st line – shouldn't this be "Highway 89" (vs. "Highway 90")?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1235:**

*(Section 5.3.13.1.1, Page 5-541)*

*All of these sections should be updated with current info. (vs. numbers listed from 2008).*

**UDWRe Response:**

**Updated information has been provided where available.**

**BLM Comment 1236:**

*(Section 5.3.13.1.1.3, Page 5-542)*

*Paria Canyon-Vermilion Cliffs Wilderness is located within both Arizona and Utah (with most of it being in Arizona). Please correct this – rewrite 1st sentence to read: “Located in Arizona and Utah, this wilderness area is primarily (90%) within VCNM but also within the Kanab Field Office (10%), and is located south of GSENM.”*

*Sentence beginning on 4th line should read: “The BLM’s Kanab Field Office and Arizona Strip Field jointly manage this designated wilderness ...”*

*7th line: Shouldn’t this be “PCVCW” rather than “VCNM”?*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1237:**

*(Section 5.3.13.1.1.2, Page 5-542)*

*GCNRA, Grand Staircase-Escalante National Monument should be changed to GCNRA, Glen Canyon National Recreation Area*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1238:**

*(Section 5.3.13.1.1.3, Page 5-542)*

*The BLM’s Kanab and Arizona Strip field offices manage this designated wilderness **area** for the use and...*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1239:**

*(Section 5.3.13.1.1.4, Page 5-542)*

*This section is very poorly organized. Please reorganize.*

**UDWRe Response:**

**Your comment has been noted. UDWRe views this section as being adequately organized.**

**BLM Comment 1240:**

*(Section 5.3.13.1.1.4, Page 5-542)*

*7th line, 1st paragraph: End of line should read "...by the PCVCW (Figure 5-160)".*

*3rd line of 2nd paragraph: Correct spelling of "borders."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1241:**

*(Section 5.3.13.1.1.4, Page 5-542)*

*"Managed by the BLM, the GSENM includes approximately 1,870,000 acres of public lands and 15,000 acres of private lands." GSENM does not include any private land. There are private inholdings within the boundaries, but they are not included in GSENM. Additionally, how many acres of inholdings exist within other public land administrative boundaries? GSENM is not the only entity with private holdings within its boundaries. Why is it singled out?*

**UDWRe Response:**

**References to private holdings have been deleted from the text.**

**BLM Comment 1242:**

*(Section 5.3.13.1.1.4, Page 5-542)*

*"Additionally, motorized access is limited in the monument, and..." motorized access is limited to designated routes.... There are more than 1000 miles of open roads in GSENM. Motorized access is limited on all BLM lands included in this project area. Calling out GSENM in this way is unnecessary.*

*"The GSENM does not contain any designated wilderness areas." While it is true that there are no designated wilderness areas in GSENM, about 50% of the Monument is wilderness study areas. As these are quite similar and managed for similar objectives, it would be more accurate to mention the wilderness study areas and how many of them are adjacent to the project area than to say there are no wilderness areas.*

**UDWRe Response:**

**Discussion of motorized access has been deleted. Discussion of wilderness study areas has been added.**

**BLM Comment 1243:**

*(Section Recreation, Page 5-542)*

*GCNRA, Grand Staircase-Escalante National Monument should be changed to GCNRA, Glen Canyon National Recreation Area*



**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1244:**

*(Section Recreation, Page 5-542)*

*The BLM's Kanab and Arizona Strip field offices manage this designated wilderness area for the use and*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1245:**

*(Section Recreation, General Comment)*

*Add discussion and analysis of impacts on recreational use of the Arizona National Scenic Trail to this chapter.*

**UDWRe Response:**

**Discussion and analysis of impacts on recreational use of the Arizona National Scenic Trail has been added to the text.**

**BLM Comment 1246:**

*(Section Recreation, Page 5-543)*

*Under each alternative add a discussion of the impacts to the recreational use of the Fredonia SRMA and its associated RMZs and the Specialized and Primitive TMAs on the Arizona Strip Field Office.*

**UDWRe Response:**

**Impacts to the Fredonia SRMA and associated RMZs are described under the BLM-ASFO heading.**

**BLM Comment 1247:**

*(Section 5.3.13.1.1.4, Page 5-543)*

*"The monument's vast, rugged, and remote landscape offers exposed geologic formations, and a record of Late Cretaceous paleontological life, with significant ancient dinosaurs, fish, and mammal fossils. Protected in its primitive, frontier state and valued as an outdoor laboratory, scientist from throughout the United States and around the world converge on the monument annually." Not sure why this in the recreation section.*

**UDWRe Response:**

**The referenced text has been deleted from the document.**

**BLM Comment 1248:**

*(Section 5.3.13.1.1.4, Page 5-543)*

*Why the calling out of guided trips without dialogue about the general recreational use?*

**UDWRe Response:**

**Information regarding guided trips was provided by BLM. Therefore, it was included in the text.**

**BLM Comment 1249:**

*(Figure 5-159, Page 5-543)*

*Please show on this map that the Paria Canyon-Vermilion Cliffs Wilderness also extends into Utah (this map makes it look as though the wilderness ends at the state line).*

**UDWRe Response:**

**The figure has been updated.**

**BLM Comment 1250:**

*(Figure 5-160, Page 5-544)*

*Please show on this map that the Paria Canyon-Vermilion Cliffs Wilderness also extends into AZ (this map makes it look as though the wilderness ends at the state line).*

**UDWRe Response:**

**The figure has been updated.**

**BLM Comment 1251:**

*(Section 5.3.13.1.1.4, Page 5-545)*

*“... ~~the~~ GSENM has over 50 authorized – Over 100 operators in 2015*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1252:**

*(Section 5.3.13.1.1.4, Page 5-545)*

*1st paragraph on page, 4th line: should be “scientists” (plural).*

**Cockscomb WSA:**

- *2nd line – middle of line should read “... on the west and the eastern GSENM boundary ...”*
- *4th line – reference should be “(BLM Undated 1)”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1253:**

*(Section 5.3.13.1.1.4, Page 5-545)*

*Please include the objectives for management in the SRMAs.*

**UDWRe Response:**

**The text includes SRMA objectives.**

**BLM Comment 1254:**

*(Section 5.3.13.1.1.4, Page 5-545)*

*Highway 89 Special Recreation Management Area - Change to Highway 89 Corridor Special...*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1255:**

*(Section 5.3.13.1.1.4, Page 5-545)*

*“SRMAs are “well-defined land units that support a combination of natural features that make them attractive and management for interrelated recreation opportunities on a sustained basis” (BLM, 1999). In SMRAs, emphasis is placed on maintaining specific features or recreation opportunities that make the SMRA unique or particularly desirable to recreationalists and other members of the public.” This information should be used in an introduction to SRMAs, not tagged onto the end of the explanation of one of the specific ones.*

**UDWRe Response:**

**The text has been placed here because it is the first mention of “SRMAs”.**

**BLM Comment 1256:**

*(Section 5.3.13.1.1.4, Page 5-545)*

*“The Wahweap WSA is located north of Highway 89 and east of the Cockscomb WSA (Figure 5-162). This WSA, which includes the White Rocks “Point of Interest” can be reached via Highway 89 at Church Wells and a series of rugged OHV roads.” Content from the Utah Wilderness Inventory 1999 would be a better source of information than what is provided. How one has access to a WSA is not the key information to share when analyzing these resources.*

**UDWRe Response:**

**As the LPP Project would run along Highway 89, the fact that this same road provides access to the Wahweap WSA is believed to be relevant.**

**BLM Comment 1257:**

(Section 5.3.13.1.1.4, Page 5-546)

**Figure 161 provided** – Section ID as state sections are incorrect. These are private sections along the Cockscomb and Sand Gulch.

**UDWRe Response:**

**The figure has been updated.**

**BLM Comment 1258:**

(Section 5.3.13.1.1.4, Page 5-547)

**Figure 162** – Private land is misrepresented as State land.

**UDWRe Response:**

**The mention of private land has been removed.**

**BLM Comment 1259:**

(Section 5.3.13.1.1.4, Page 5-548)

*Historic Trails are not recreation resources, per se. They are more connected to Historic Resources. The OST is utilized by very few for recreational purposes such as hiking, camping or viewing wildlife within GSENM.*

**UDWRe Response:**

**The text has been changed to state that the OST is seldom used for recreational purposes.**

**BLM Comment 1260:**

(Section 5.3.13.1.1.4, Page 5-548)

**Historic Trails:**

- **2nd paragraph, 2nd line** – reference should be “(BLM Undated 2)”.
- **Last line of 4th paragraph** – replace “right-of-way” with “corridor.”

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1261:**

(Section 5.3.13.1.1.4, Page 5-548)

*Recreational opportunities along the trail include – Please add landscape photography to activities.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1262:**

*(Section 5.3.13.1.1.4, Page 5-548)*

**Third paragraph:** *The Honeymoon Trail is not located with the Grand Staircase- Escalante NM. It is located on the Arizona Strip District and St. George Field Office.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1263:**

*(Section 5.3.13.1.1.4, Page 5-548)*

**Fourth paragraph:** *Fathers Francisco Dominguez and Silvestre Escalante – This whole paragraph needs to move up under the 2nd paragraph. It is out of place to the preceding paragraph.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1264:**

*(Section 5.3.13.1.1.4, Page 5-548)*

**Fourth paragraph:** *Recreation Study Area – Should read SRMA....*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1265:**

*(Section 5.3.13.1.1.4, Page 5-548)*

**Fourth paragraph:** *Highway 89 near the Town of Big Water – In the town of Big Water...*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1266:**

*(Section 5.3.13.1.1.4, Page 5-549)*

*“70 to 80 percent of the visitors received are foreigners...” Please use the term “international visitors” rather than “foreigners”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1267:**

(Section 5.3.13.1.1.4, Page 5-549)

**Big Water Visitor Center:** “... and reported receiving over 35,000 visitors in 2008.” 2015 annual visitation equaled 36,792

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1268:**

(Section 5.3.13.1.1.4, Page 5-549)

**Big Water Visitor Center:** “It is anticipated that in the near future the BLM will install picnic tables at the Big Water Visitor Center, and construct a loop road to allow large RVs and buses to turn-around.” This already exists at the BW Visitor Center.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1269:**

(Section 5.3.13.1.1.4, Page 5-549)

**Paria Contact Station, White House Campground, and White House Trail:** “rustic contact station” Not sure what makes this facility rustic. It’s sided with stucco and has a red metal roof. There are flush toilets inside the building. Please verify the presence of outhouses at this site. The Paria Contact Station is not the trailhead. The trailhead is located more than a mile down the road at the campground.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1270:**

(Section 5.3.13.1.1.4, Page 5-549)

**Paria Contact Station, White House Campground, and White House Trail**  
“No water, telephones, or trash collection is available at the campground.”  
When amenities available at a facility are listed, there is no reason to list what is not there.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1271:**

(Section 5.3.13.1.1.4, Page 5-549)

Update Whitehouse Campground use numbers.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1272:**

*(Section 5.3.13.1.1.4, Page 5-549)*

*between October 1, 2008, and September 30, 2009 – 2015 visitation was 2075*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1273:**

*(Section 5.3.13.1.1.4, Page 5-549)*

*Toadstools Trailhead: 1st line – insert “is” after “Trailhead.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1274:**

*(Section 5.3.13.1.1.4, Page 5-549)*

**Toadstools Trailhead**

*Please delete the sentence about “kid friendly” and can be “used during inclement weather”. Not necessary for analysis.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1275:**

*(Section 5.3.13.1.1.4, Page 5-549)*

*BLM staff reported use numbers of 5,232 for the Toadstools Trailhead between October 1, 2008, and September 30, 2009 (Kiel, pers. comm.). 2015 visitation was 15,643*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1276:**

*(Section 5.3.13.1.1.4, Page 5-550)*

**House Rock Valley Road:**

- **3rd line** – *it takes substantially longer than one hour to drive between Highway 89 and 89A on this road. Driving time is more like 1½-2 hours. Please correct this.*
- **4th line** – *end of line should read “... for RVs, travel trailers, or passenger cars. Visitors”.*
- **9th line** – *acronym should be “PCVCW.”*

**UDWRe Response:**



**The suggested edits have been incorporated.**

**BLM Comment 1277:**

*(Section 5.3.13.1.1.4, Page 5-550)*

*Please delete information regarding Catstair Canyon. This is not a developed trailhead with any visitor facilities.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1278:**

*(Section 5.3.13.1.1.4, Page 5-550)*

*Update use numbers in House Rock Valley Road section*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1279:**

*(Section 5.3.13.1.1.4, Page 5-550)*

*The Paria Movie Set and Pahreah Townsite section is written in a manner that is hard to understand. No need to say that camping is prohibited. If it is day use only, that is implied. Also no reason to point out that the Paria River bed is closed to vehicles.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1280:**

*(Section 5.3.13.1.1.4, Page 5-550)*

*Why call out a section for OHV and Hunting (same issue raised for Guided Trips)? Why not just have a section that described the variety and range of recreational use in the portion of GSENM? There are not sections for Hiking, Backpacking, Photography, Wildlife Watching, etc. The blending of designations, locations, recreation sites and some uses in the section is not organized or easy-to-understand.*

**UDWRe Response:**

**Information regarding OHV and hunting was provided by BLM. Therefore, it was included in the text.**

**BLM Comment 1281:**

*(Section 5.3.13.1.1.4, Page 5-550)*

*“... 463 and 5,361 for the Buckskin Gulch and Wire Pass trailheads between October 1, 2008, and September 30, 2009.” 2015 buckskin was 1434 visits*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1282:**

*(Section 5.3.13.1.1.4, Page 5-550)*

*Update all visitation numbers for GSENM since 2008*

**UDWRe Response:**

**Updated information has been included where available.**

**BLM Comment 1283:**

*(Section 5.3.13.1.1.4, Page 5-551)*

**Kanab Visitor Center:**

- *1st paragraph, 2nd/3rd lines – should read “... Highway 89, on the eastern edge of the Town of Kanab. The modern center ...”*
- *2nd paragraph, 5th/6th lines – replace “Coyote Buttes with “PCVCW.”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1284:**

*(Section 5.3.13.1.1.4, Page 5-551)*

*Rock collecting is not allowed on GSENM, so including this under the GSENM heading is misleading. If rock collecting permits are provided at this facility, it is for non-Monument, BLM lands.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1285:**

*(Section 5.3.13.1.1.4, Page 5-551)*

*Kanab Visitor Center – 2015 visitation is 47,312*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1286:**

*(Section 5.3.13.1.1.5, Page 5-551)*

*1st paragraph, 5th line* – sentence beginning in the middle of the line should read “As stated previously, PCVCW is jointly managed with BLM’s Arizona Strip Field Office, and the Paria Contact Station (located within GSENM) is under the ...”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1287:**

*(Section 5.3.13.1.1.4, Page 5-551)*

*“... and Capitol Reef National Park and GCNRA to the east. A portion of the PCVCWA and GSENM is also under the jurisdiction of the BLM Kanab Field Office.” No lands managed by KFO border Capitol Reef. GSENM and CARE share a boundary. No portions of GSENM are under the jurisdiction of KFO, just as none of KFO’s lands are under the jurisdiction of GSENM. We have locations where the management of certain programs/resources/uses is done jointly or via cooperative agreements, but “jurisdiction” is not an accurate term for use here.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1288:**

*(Section 5.3.131.1.6, Page 5-553)*

*1st paragraph, 4th line* – beginning of line should read “GCNRA, GSENM, and the Kanab Field Office.”

*1st paragraph, 8th line* – insert “the” after “directly across.”

*2nd paragraph, 2nd line* – delete “antelope” (contrary to popular belief, pronghorn are not antelope).

*2nd paragraph, 3rd line* – delete “Kaibab squirrel” as none are present (and no habitat exists) on the AZ Strip Field Office.

*Please add a brief discussion on Stateline Campground: “Stateline Campground is a small campground located 9.3 miles south of Highway 89, along the House Rock Valley Road. It is one mile south of the Wire pass Trailhead. Facilities at this campground include both drive in and walk-in campsites (7 total), restrooms, picnic tables, and fire pits. There is no water and no trash pick-up, and no fee to camp. The Arizona Scenic Trail can be accessed from Stateline Campground.”*

**UDWRe Response:**

**The suggested edits have been incorporated.  
The figure has been updated.**

**BLM Comment 1289:**

*(Figure 5-164, Page 5-554)*

*In legend – it should be “Arizona Strip Field Office (BLM)” (delete “Public”).*

**UDWRe Response:**

**The figure has been updated.**

**BLM Comment 1290:**

*(Section 5.3.13.1.1.6, Page 5-555)*

*SRMA Figures for GSENM SRMAs missing.*

**UDWRe Response:**

**The figures have been added.**

**BLM Comment 1291:**

*(Section 5.3.13.1.1.6, Page 5-558)*

*Cottonwood Point Wilderness: 5th line – should be “Canaan Mountain Wilderness” (it is no longer a WSA).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1292:**

*(Section 5.3.13.1.1.6, Page 5-558)*

*Cottonwood Point Wilderness: 5th line – should be “Canaan Mountain Wilderness” (it is no longer a WSA).*

*Fredonia Welcome Center: insert comma after “Highway 389” on first line.*

*Fredonia – Vermilion Cliffs Scenic Drive: 4th/5th lines – GSENM has no land that rises to 11,000 ft. in elevation (this must be a reference to the nearby Dixie NF).*

**UDWRe Response:**

**The suggested edits from the first and second paragraphs of the above comment have been incorporated.**

**BLM Comment 1293:**

*(Section 5.3.13.1.1.6, Page 5-558)*

***Fredonia-Vermilion Cliffs Scenic Drive Road***

*Fredonia is a western point of departure for the Highway 89 and Highway 89A loop (BLM, 2009) of the Fredonia- Vermilion Cliffs Scenic Road, which has been designated a scenic road by the Arizona Department of Transportation. Conduct a global search throughout the document to correct.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1294:**

*(Section 5.3.131.1.6, Page 5-559)*

*Third/Fourth lines on page: Please change to the St. George Field Office (formerly called the Dixie Resource Area, but not called that in quite a few years).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1295:**

*(Section 5.3.131.1.7, Page 5-559)*

*1st paragraph, 8th line: should be “county” (not “country”)/*

*9th line: insert “Rouch,” before “Moccasin” (Rouch Road is another county road on the Reservation).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1296:**

*(Section 5.3.131.1.7, Page 5-560)*

*Old Spanish Trail should be corrected to Old Spanish National Historic Trail. – do a global search and replace on this one. At places in the EA, it is simply listed as ‘Spanish Trail.’ Dominguez-Escalante Trail does not cross the Kaibab Paiute Reservation.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1297:**

*(Section 5.3.13.1.1.9, Page 5-562)*

**Off-Highway Vehicle Use:**

- *1st paragraph, 5th line – should be “OHV” (not “OHO”).*
- *2nd paragraph, 1st/2nd lines – should read “OHV use on public lands in Washington County is, in large part, limited to use of existing roads and trails. OHV use in several special management areas and watersheds is limited to designated roads and trails”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1298:**

*(Section 5.3.13.1.1.9, Page 5-562)*

*The acreage figures in the “Off-Highway Vehicle” paragraph are not correct. This has changed since this study plan was developed and it will be changing again when the St. George*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1299:**

*(Section 5.3.13.1.1.9, Page 5-562)*

*Not sure if this is called out elsewhere in the document, but this plan would require changes to the OHV area designations and the SRMA designations. Both are Land Use Plan decisions and would require a plan amendment that removes this designation on affected lands.*

**UDWRe Response:**

**Refer to the Cumulative Effects section of the text.**

**BLM Comment 1300:**

*(Section 5.3.13.1.1.9, Page 5-562)*

*“Approximately 12 percent of the Sand Mountain SRMA (5,057 acres) lies within the recreation resources study area.” This statement is suspect. One can’t just remove a portion of an SRMA and OHV area without the rest of the area being affected to some degree. When combined with impacts from construction of the Southern Parkway and the proposed Warner Valley Reservoir, the cumulative impacts to motorized recreation will be significant.*

*It should be noted that the St. George Field Office considers the 20,000 acre Sand Mountain Open OHV Area to be the most important piece of recreation real estate in Southwest Utah. This area is an economic driver that hosts major motorized events and races. More importantly, it provides a play area for OHV’s in a densely populated region that contains many sensitive plant and species. Having the OHV area in place helps protect that sensitive habitat. Any reduction in the OHV Open Area acreage would be considered detrimental.*

**UDWRe Response:**

**The statement described in Paragraph 1 is correct as written. Additional information is included in the Cumulative Effects section of the text. The text has been revised to include Paragraph 2.**

**BLM Comment 1301:**

*(Section 5.3.13.1.1.9, Page 5-562)*

*“Red Cliffs Desert Reserve.” All public lands within the Red Cliffs Desert Reserve are now the “Red Cliffs National Conservation Area” as designated by Congress in 2009. Not sure why this is even included in this analysis as it is not affected by the pipeline in any way.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1302:**

*(Section 5.3.13.1.1.9, Page 5-565)*

*The Hurricane Cliffs Non-Motorized Trail System now includes ten trails: Jem, Chinatown Wash, Rim, Canal, Gould's Rim, Gould's, More Cowbell, Dead Ringer, Cryptobionic, and Goosebumps.*

*That said, why this trail system is still being analyzed? If the Cedar City pipeline option is no longer viable, this system would not be impacted at all.*

**UDWRe Response:**

**The suggested edit for the first paragraph has been incorporated.**

**BLM Comment 1303:**

*(Section 5.3.13.1.1.9, Page 5-565)*

*Hurricane Cliffs Non-Motorized Trail System: 2nd paragraph, 2nd line – delete “As implied” (sentence should just begin by saying “Only non-motorized users ...”).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1304:**

*(Section 5.3.13.1.1.9, Page 5-565)*

*Why is the Laverkin Creek/Black Ridge SRMA still included in this document? This area is not close to, nor would it be affected by, the proposed pipeline. If the Cedar City pipeline option is no longer viable, this system would not be impacted at all.*

**UDWRe Response:**

**The La Verkin Creek/Black Ridge SRMA text has been deleted.**

**BLM Comment 1305:**

*(Section 5.3.13.1.1.10, Page 5-568)*

*1st paragraph, 3rd line – should be “state parks” (plural).*

*2nd paragraph:*

- *2nd line – should be “(UTI 2009a)”.*
- *6th line – This reference should be “(UTI 2009a)” not “(USP 2009)”.*

**UDWRe Response:**

**The suggested edit in the first paragraph has been incorporated into the text. UDWRe believes the references in the second paragraph should be “(UTI 2009)”.**



**BLM Comment 1306:**

*(Section 5.3.131.1.12, Page 5-568)*

*1st line – page A&A-1 of this PLP defines the acronym “DNF” as “Direct Natural Flow,” so don’t use an acronym for Dixie National Forest (simply write out the name).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1307:**

*(Section 5.3.13.1.1.12, Page 5-572)*

*1st paragraph on page, 1st and 4th lines - page A&A-1 of this PLP defines the acronym “DNF” as “Direct Natural Flow,” so don’t use an acronym for Dixie National Forest (simply write out the name).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1308:**

*(Section 5.3.13.1.1.13, Page 5-572)*

*1st paragraph, 6th line – This reference should be “(UTI 2009b)” not “(USP 2009a)”.*  
*2nd paragraph, 5th line – delete “may” (visitors are supposed to pay an entrance fee – this makes it sound as though it is voluntary).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1309:**

*(Section 5.3.13.1.1.14, Page 5-572)*

*Amangiri Resort: Add “(Amangiri, no date)” to the list of references.*

*Paria Outpost Resort:*

*• 2nd line – replace “GSENM’s” with “BLM’s” (note – while the contact station sits on GSENM land, it is under the jurisdiction/management of the Kanab Field Office).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1310:**

*(Section 5.3.13.1.2.1, Page 5-574)*

*4th line – This reference should be “(ASP 2008)” not “(ASP 2007)”.*

**UDWRe Response:**

**The text is correct as written. The 2008 SCORP was published in 2007.**

**BLM Comment 1311:**

*(Section 5.3.13.1.2.1, Page 5-575)*

**Coconino County:**

- **10th line** – insert “County” after “Coconino”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1312:**

*(Section 5.3.13.1.2.1, Page 5-576)*

**4th line on page** – what table (text references a table, but there is no table included on this page (or following pages)?

**UDWRe Response:**

**The reference to this table has been deleted from the text.**

**BLM Comment 1313:**

*(Section 5.3.13.1.2.5, Page 5-576)*

*“In addition, the BLM currently has plans for developing a pullout in Church Wells, which will include an OHV use area, camping, and a picnic day-use area (Stewart, pers. comm.). Within the BLM, it has been proposed to make Catstair Canyon an official trailhead; however, the further development of the area has received resistance because of associated safety issues (Stewart, pers. comm.). There are ongoing public efforts to fund the construction of another replica set at the Paria Movie site. The BLM has plans to expand this site by improving interpretive exhibits, and ultimately intends to make it an equestrian trailhead (Stewart, pers. comm.). The BLM plans to host weekend OHV gatherings on the Great Western Trail. (Christensen, pers. comm.).” Please delete all this content.*

*There are no approved plans (or formal proposals in review) related to any of these items.*

*“The BLM currently has plans to replace existing picnic tables and grills at the White House Campground. If the existing road to the campground is washed out, it will be converted to walkin, tent campground (Stewart, pers. comm.).” These items have been addressed. Please delete this content.*

*Why does the Recreation section include so much information on what can’t be done in GSENM or items that “may” be untaken in the future? Whereas the content associated with what does and can occur is so weak. What relevance does this information bring to bear on this project?*

*Please include more explanation of what can and does occur in GSENM and less on what can’t be done in GSENM or items that “may” be untaken in the future.*

*Only include projects that are formally approved or being formally analyzed for implementation in the cumulative effects sections.*

**UDWRe Response:**

**The references to Church Wells Pullout, Paria Movie Site replica set, GWT OHV gatherings, and White House Campground improvements have been deleted.**

**BLM Comment 1314:**

*(Section 5.3.13.1.2.5, Page 5-576)*

*4th paragraph, 2nd line – insert “a” after “converted to”.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1315:**

*(Section 5.3.13.1.2.6, Page 5-577)*

*5.3.13.1.2.6 BLM – Kanab Field Office and BLM – Arizona Strip Field Office.*

*Add to this section – The Arizona Strip Field Office RMP states that in the Fredonia SRMA and it's associated RMZs “the BLM will produce close-to-town opportunities for community residents and seasonal, regional visitors to enjoy directed day- use adventure activities in scenic landscapes along structured travel routes and open space areas associated with Woodhill Road...” Other BLM recreation actions in the Arizona Strip Field Office include, “To the extent practicable, the natural or “remote” settings in Specialized and Primitive TMAs will be ‘restored and/or maintained ...’. Also, the Old Spanish National Historic Trail resources will be identified, recorded, and protected on Federal land. Significant trail segments, corridors and associated sites should be identified, protected, and interpreted for public use. Viewsheds, as observed from any of these areas (trail segments, trail corridors or associated sites), will be maintained.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1316:**

*(Section 5.3.13.1.2, Page 5-577)*

*Environmental Effects – added to the list of significance criterion for determining effects on recreation resources should also be the deterioration in the recreation experience (i.e., the social aspect of such experiences).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1317:**

(Section 5.3.13.2.1.1, Page 5-578)

*Construction Effects: 2nd line – should read “89 in the vicinity of ...” (delete “and”).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1318:**

(Section 5.3.13.2.1.1, Page 5-579)

**Carl Hayden Visitor Center:**

- **Construction Effects:** *1st line – delete “the” before “Highway 89”.*
- **Operation Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**Glen Canyon Dam Overlook:**

- **Construction Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*
- **Operation Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**Chains Recreation Area:**

- **Operation Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1319:**

(Section 5.3.13.2.1.1, Page 5-580)

**Wahweap Overlook:**

- **Construction Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*
- **Operation Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**Lone Rock Recreation Area:**

- **Construction Effects:** *6th line – why is “Highway” in all caps? Please correct this.*
- **Operation Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1320:**

(Section, 5.3.13.2.1.2 Page 5-581)

**Construction Effects:**

- ***1st line*** – these impacts would be “significant” (not minor)  
... House Rock Valley Road is the major access point for hikers going to The Wave, an internationally renowned

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1321:**

*(Section 5.3.13.2.1.3, Page 5-581)*

**Construction Effects:**

- ***1st line*** – these impacts would be “significant” (not minor)  
... House Rock Valley Road is the major access point for hikers going to The Wave, an internationally renowned destination. If access were to be blocked for up to 8 hours, this would significantly affect all of those users (since that could be most of the daylight hours).
- ***2nd/3rd lines*** – The road south of Highway 89 is not considered the Cottonwood Road (which is only the part north of the highway).
- ***3rd line*** – add roads in the Ferry Swale area (which would also be affected by temporary construction closures).

**Operation Effects:**

*Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1322:**

*(Section 5.3.13.2.1.4, Page 5-581)*

**Construction Effects:**

- ***1st line*** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on trip guides.
- ***2nd/3rd lines*** – The road south of Highway 89 is not considered the Cottonwood Road (which is only the part north of the highway).
- ***3rd line*** – add roads in the Ferry Swale area (which would also be affected by temporary construction closures).

**Operation Effects:**

*Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1323:**

(Section 5.3.13.2.1.4, Page 5-581)

*Add discussion of effects on general recreational (outside of guided trips). Explain what a maximum 8 hour delay means. Someone could be stopped for 8 hours and held at a blocked location?*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1324:**

(Section 5.3.13.2.1.4, Page 5-582)

*The WSAs effects analysis should be guided by non- impairment policy.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1325:**

(Section 5.3.13.2.1.4, Page 5-582)

*These sections (all sections) need to be written parallel to the development of the project. BPS-4 is discussed prior to BPS-3. Then BPS-4 is discussed again after BPS-3. This makes the document very difficult to review and event harder to understand and follow.*

**UDWRe Response:**

**UDWRe's view is that the organization of the text is adequate.**

**BLM Comment 1326:**

(Section 5.3.13.2.1.4, Page 5-582)

*This section leaves out the discussion of impacts of construction and pump stations in proximity to the Cockscomb WSA as well as Wahweap WSA.*

*The nearness to the WSA boundary of the construction for the pipeline and the footprint of the pump stations requires adoption of design features to avoid light trespass onto dark skies and noise trespass onto natural quiet within the proximate WSAs. Sound and light carries for great distance and could impact visitor experience.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1327:**

(Section 5.3.13.2.1.4, Page 5-582)

**Guided Trips**

• **Operation Effects:** Please provide more explanation on why there would be indirect effects from viewing Proposed Action facilities.

**Cockscomb WSA**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Construction Effects: 9th line** – Explain why no effects (can’t just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Wahweap WSA**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Construction Effects: 9th line** – Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1328:**

(Section 5.3.13.2.1.4, Page 5-582)

**Cockscomb Wilderness Study Area:**

**Construction Effects**

The section completely leaves out the installation of the pipeline in these sections. The installation will have a direct effect on WSA user experience while the pipeline is being installed. These sections only discuss Pumping stations which is only part of the analysis needed. The WSA is on average only 600 feet north of Hwy 89 in this area.

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1329:**

(Section 5.3.13.2.1.4, Page 5-583)

Effects on historic trails should be disclosed per NHT policy (intactness of setting, etc.).

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1330:**

(Section 5.3.13.2.1.4, Page 5-583)

**Wahweap WSA**

- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).



**Highway 89 SRMA**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Historic Trails**

- **Construction Effects: 1st paragraph, 2nd line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Construction Effects: 2nd paragraph, 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1331:**

(Section, 5.3.13.2.1.4 Page 5-584)

**Paria Canyons and Plateaus SRMA**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Big Water Visitor Center**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Paria Contact Station, etc.**

- **Construction Effects: 1st line** – these impacts would be “significant” (not minor) ... White House Trail is the major access point for hikers going into Paria Canyon, an internationally renowned destination. If access were to be blocked for up to 8 hours, this would significantly affect all of those users (since that could be most of the daylight hours).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1332:**

(Section 5.3.13.2.1.4, Page 5-585)

*Explain why construction of pipeline through a trailhead would not displace users during construction.*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1333:**

*(Section 5.3.13.2.1.4, Page 5-585)*

**Paria Contact Station, etc.**

• **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Toadstools Trailhead**

• **Construction Effects: 1st paragraph, 1st line** – *these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.*

• **Construction Effects: 2nd paragraph** - *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

• **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Catstair Canyon Trailhead**

• **Construction Effects: 1st line** – *these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.*

• **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**House Rock Valley Road**

• **Construction Effects: 1st line** – *these impacts would be “significant” (not minor) ... House Rock Valley Road is the major access point for hikers going to The Wave, an internationally renowned destination. If access were to be blocked for up to 8 hours, this would significantly affect all of those users (since that could be most of the daylight hours).*

*Add to the end of this paragraph: “This road serves as the primary access point for visitor hiking to the internationally renowned geological feature/destination known as The Wave. Hikers may wait days to obtain a hiking permit, and then have a relatively short window of time to make the hike. Delaying hikers by up to 8 hours would have a significant effect on these public land users, as well as to other visitors to VCNM and the western part of PCVCW (Coyote Buttes North and Coyote Buttes South).*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1334:**

*(Section 5.3.13.2.1.4, Page 5-586)*

**House Rock Valley Road**

• **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Paria Movie Set, etc.**

• **Construction Effects: 1st line** – *these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.*

- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**OHV Use/Hunting.**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1335:**

*(Section 5.3.13.2.1.4, Page 5-587)*

**Great Western Trail**

- **Construction Effects: 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**Kanab Visitor Center**

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1336:**

*(Section 5.3.13.2.1.4, Page 5-587)*

**Construction Effects:**

- **1st paragraph, 1st line** – these impacts would be “moderate” or even “significant” (not minor) ... closing the Johnson Canyon Road for up to 4 hours would have quite an effect on users. This road is a major access point for the eastern portion of the Kanab Field Office.

**Note:** This should also be added to the GSENM section wherever Johnson Canyon Road is referred to (this road is the primary access road into the entire western section of GSENM).

- **2nd paragraph, 1st line** – these impacts would be “moderate” or even “significant” (not minor) ... closing access roads (especially the Johnson Canyon Road, even temporarily) would have quite an effect on users.

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1337:**

*(Section 5.3.13.2.1.5, Page 5-588)*

***Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1338:**

*(Section 5.3.13.2.1.6, Page 5-588)*

**Sand Hills SRMA**

- **Construction Effects:** *1st line* – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **3rd line** – The road south of Highway 89 is not considered the Cottonwood Road (which is only the part north of the highway).
- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Fredonia SRMA**

- **Construction Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*
- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Cottonwood Point Wilderness**

- **Construction Effects:** *Need to describe why visual impacts would be minimal when facility sites can be seen.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1339:**

*(Section 5.3.13.2.1.6, Page 5-589)*

**Cottonwood Point Wilderness**

- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Fredonia Welcome Center**

- **Construction Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*
- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Historic Trails**

- **Construction Effects: 1st paragraph, 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- 2nd paragraph, 1st line** – these impacts would be “moderate” (not minor) ... closing access roads for up to 8 hours would have quite an effect on users.
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Fredonia – Vermilion Cliffs Scenic Drive**

- **Construction Effects: 1st line** – these impacts would be “significant” (not minor) ... Highway 89A is the major access point for hikers going to The Wave, an internationally renowned destination. If access were to be blocked for up to 8 hours, this would significantly affect all of those users (since that could be most of the daylight hours).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1340:**

(Section 5.3.13.2.1.6, Page 5-589)

**Historic Trails**

*Under each alternative add a discussion of the impacts to the recreational use of the Old Spanish National Historic Trail.*

*Most of the South Alternative, Southeast Corner Alternative and natural gas pipeline route all will impact the recreational opportunities and settings of the Armijo Portion (Southern Route) of the Old Spanish National Historic Trail. The pipeline corridor and associated natural gas pipeline almost directly follow this national historic trail and will directly impact it along with future recreational use.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1341:**

(Section 5.3.13.2.1.6, Page 5-590)

**Fredonia – Vermilion Cliffs Scenic Drive**

- **Construction Effects: 3rd line on page** – change “could” to “would” ... traffic congestion on Highway 89A **WOULD** delay recreational users.
- **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Vermilion Cliffs Highways Scenic Drive**

- **Construction Effects: 1st paragraph, 1st line** – these impacts would be “significant” (not minor) ... all of the listed highways are major access points for recreational users. If access were to be blocked for up to 8 hours, this would significantly affect all of those users.
- 2nd paragraph, 1st line** – these impacts would be “moderate” (not minor) ... all of the listed highways are major access points for recreational users, and traffic congestion would greatly affect all of those users.

- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**Arizona Strip Pull-Off**

- **Construction Effects: 1st sentence** – explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1342:**

(Section 5.3.13.2.1.6, Page 5-591)

**Arizona Strip Pull-Off**

- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1343:**

(Section 5.3.13.2.1.7, Page 5-591)

**Kaibab-Paiute Tribe Campground**

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**Historic Trails**

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1344:**

(Section 5.3.13.2.1.8, Page 5-591)

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1345:**

*(Section 5.3.13.2.1.9, Page 5-591)*

**OHV Use**

• **Construction Effects:** *1st line – these impacts would be at least “moderate” (not minor) ... OHV use is a BIG use of the public lands around St. George, and blocking access points for up to 8 hours would greatly affect all of those users.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1346:**

*(Section 5.3.13.2.1.9, Page 5-592)*

**OHV Use**

• **Operation Effects:** *1st sentence – Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**Sand Mountain SRMA**

• **Construction Effects:** *Add expected degree of impacts to first sentence in 1st paragraph – sentence should read “The Proposed Action construction would have significant long-term effects on recreation resources in the Sand Mountain SRMA.” Then delete the sentence later in the paragraph that begins “This would be a significant ...”*

**6th line of 1st paragraph** - *these impacts would be moderate” (not minor) ... OHV use is a BIG use of the public lands around St. George, and blocking access points for up to 8 hours would greatly affect all of those users.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1347:**

*(Section 5.3.13.2.1.9, Page 5-593)*

**Sand Mountain SRMA**

• **Operation Effects:** *Add expected degree of impacts to first sentence in 1st paragraph – sentence should read “Proposed Action operations would have significant direct effects on recreational use of the Sand Mountain SRMA*

*...” Then delete the sentence later in the paragraph that begins “The permanent removal of the afterbay reservoir from recreational use ...”*

**3rd line of 2nd paragraph** – *please define what is meant by “slight” delays.*

**Red Cliffs Desert Reserve**

• **Construction Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*



- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**Hurricane Cliffs Non-Motorized Trail System**

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**Frog Hollow OHV Area**

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1348:**

*(Section 5.3.13.2.1.9, Page 5-594)*

**La Verkin Creek/Black Ridge SRMA**

- **Construction Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).
- **Operation Effects:** Explain why no effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1349:**

*(Section 5.3.13.2.1.10, Page 5-594)*

**Construction Effects:**

***1st line of 1st paragraph*** – these impacts would be “significant” (not minor) ... permanently displacing dispersed campers and closing the state park road for up to 8 hours would significantly affect users of this park (it's a popular and well-used park).

***1st line of 2nd paragraph*** – these impacts would be “moderate” (not minor) ... delays in accessing this well-used park and traffic congestion would greatly affect all of those users.

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1350:**

*(Section 5.3.13.2.1.11, Page 5-594)*

**Construction Effects:**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1351:**

*(Section 5.3.13.2.1.12, Page 5-595)*

**Construction Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Operation Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1352:**

*(Section 5.3.13.2.1.13, Page 5-595)*

**Construction Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Operation Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1353:**

*(Section 5.3.13.2.1.14, Page 5-595)*

**Amangiri Resort:**

**Construction Effects**

*1st line of 1st paragraph – these impacts would be “moderate” (not minor) ... blocking access to this resort for up to 8 hours would greatly affect resort guests.*

**Operation Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1354:**

*(Section 5.3.13.2.1.14, Page 5-596)*

**Amangiri Resort**

**Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Paria Outpost Resort**

**Construction Effects:** *1st line of 1st paragraph – these impacts would be “moderate” (not minor) ... blocking access to this resort for up to 8 hours would greatly affect resort guests and the resort owners.*

**Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Willowwind RV Park**

**Construction Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1355:**

*(Section 5.3.13.2.2.1, Page 5-597)*

**Construction Effects**

**1st line of 1st paragraph** – *these impacts would be “moderate” (not minor) ... blocking access to these public lands from Highway 89 for up to 8 hours would greatly affect recreational users.*

**Operation Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1356:**

*(Section 5.3.13.2.2.2, Page 5-597)*

**Construction Effects**

**1st line of 1st paragraph** – *these impacts would be “significant” (not minor) ... blocking access to these public lands from Highway 89 for up to ONE WEEK would greatly affect recreational users.*

**Operation Effects**

*Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1357:**

*(Section 5.3.13.2.2.2, Page 5-598)*

**Cottonwood Point Wilderness**

- **Construction Effects:** *Need to describe why visual impacts would be minimal when facility sites can be seen.*
- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Fredonia Welcome Center**

- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Historic Trails**

- **Construction Effects:** *1st line of 1st paragraph – these impacts would be “moderate” (not minor) ... blocking access to these trails for up to 8 hours would greatly affect recreational users.*

*1st line of 2nd paragraph – these impacts would be “moderate” (not minor) ... blocking access to these trails for up to 8 hours would greatly affect recreational users.*

*2nd line of 2nd paragraph – insert “on” after “indirect effects.”*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1358:**

*(Section 5.3.13.2.2.2, Page 5-599)*

**Historic Trails**

- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Fredonia - Vermilion Cliffs Scenic Drive**

- **Construction Effects:** *1st line of 1st paragraph – these impacts would be “moderate” (not minor) ... blocking traffic along Highway 89A would greatly affect visitors to the area.*
- **1st line of 2nd paragraph** – *these impacts would be “moderate” (not minor) ... traffic congestion on this well-traveled highway would greatly affect visitors.*
- **Operation Effects:** *Explain why no effects (can't just say there are none without describing how that conclusion was reached).*

**Vermilion Cliffs Highways Scenic Drive**

• **Construction Effects: 1st line of 1st paragraph** – these impacts would be at least “moderate”, if not significant (not minor) ... all of the highways listed are MAJOR access routes to major recreational sites in the area, so causing traffic delays would greatly affect recreational users.  
**1st line of 2nd paragraph** – these impacts would be “moderate” or significant (not minor) ... traffic congestion on these major highways would greatly affect recreational users trying to get to these areas.

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1359:**

(Section 5.3.13.2.2.2, Page 5-600)

**Vermilion Cliffs Highways Scenic Drive**

• **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Arizona Strip Pull-Off**

• **Construction Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

• **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1360:**

(Section 5.3.13.2.2.3, Page 5-600)

**Kaibab-Pauite Tribe Campground and RV Park**

• **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1361:**

(Section 5.3.13.2.2.3, Page 5-601)

**Historic Trails**

• **Construction Effects: 1st line of 1st paragraph** – these impacts would be “moderate” (not minor) ... blocking access to these trails for up to 8 hours would greatly affect recreational users.

• **Operation Effects:** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1362:**

*(Section 5.3.13.2.2.4, Page 5-601)*

**Construction Effects**

*1st line of 1st paragraph – these impacts would be “moderate” (not minor) ... blocking access to this national monument would greatly affect recreational users.*

**Operation Effects** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1363:**

*(Section 5.3.13.2.3.1, Page 5-602)*

**Operation Effects**

*Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1364:**

*(Section 5.3.13.2.4, Page 5-602)*

*Need to describe why visual impacts would be minimal when the new transmission would be seen. Seems to me that the impact would be “moderate” not “minor.”*

*7th line – How can the transmission lines be “independent” of the pipeline and penstock? They are very closely interrelated (if it weren’t for the water conveyance system, there would be no proposed transmission lines).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1365:**

*(Section 5.3.13.2.4.1, Page 5-603)*

**Dead Dog and Ropes Recreation Areas**

• **Operation Effects:** *Impacts to recreational users would be “moderate” not “minor” since viewing new transmission lines would affect the experience of the user.*

**Colorado River Discover Rafting Tours**

• **Operation Effects:** *Explain why no effects (can’t just say there are none without describing how that conclusion was reached).*

**Highway 89**

- ***Operation Effects:*** Impacts to recreational users would be “moderate” not “minor” since viewing new transmission lines would affect the experience of the user.

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1366:**

*(Section 5.3.13.2.4.1, Page 5-604)*

**Carl Hayden Visitor Center**

- ***Operation Effects:*** Explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Glen Canyon Dam Overlook**

- ***Construction Effects: 1st sentence*** – explain why no effects (can’t just say there are none without describing how that conclusion was reached).

**Chains Recreation Area**

- ***Operation Effects:*** Impacts to recreational users would be “moderate” not “minor” since viewing new transmission lines would affect the experience of the user.

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1367:**

*(Section 5.3.13.2.4.2, Page 5-605)*

**Construction Effects**

***4th line*** – “indirect effects” should be in parentheses.

**Operation Effects**

*Impacts to recreational users in this national monument would be “moderate” not “minor” since viewing new transmission lines would affect the experience of the user to this remote and scenic area.*

**UDWRe Response:**

**The suggested edit to the fourth line of the “Construction Effects” text has been incorporated.**

**These indirect impacts on recreational users would be minor because the new transmission lines could potentially be viewed from the Vermilion Cliffs National Monument looking through the existing Navajo-McCullough 500 kV transmission lines and the existing Garkane Energy Cooperative, Inc. 138 kV transmission line. The proposed new 230 kV transmission line would be north of the two existing**



transmission lines, which could be viewed from the south by recreational users of a narrow portion of the Vermilion Cliffs National Monument.

**BLM Comment 1368:**

*(Section 5.3.13.2.4.3, Page 5-605)*

**Construction Effects**

*4th line – State how far north of PCVCW the transmission lines would be built ... this will help to provide context for the impacts discussion.*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1369:**

*(Section 5.3.13.2.4.4, Page 5-605)*

**Construction Effects**

*Explain why there would be no direct effects (can't just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1370:**

*(Section 5.3.13.2.4.4, Page 5-606)*

**Guided Trips**

• ***Operation Effects:*** Add to the end of the last sentence: “, and could therefore result in impacts to the experience of public land users.”

**Wahweap WSA**

• ***Construction Effects:*** Last sentence – explain why there would be no direct effects (can't just say there are none without describing how that conclusion was reached).

**Highway 89 SRMA**

• ***Construction Effects:*** Explain why there would be no direct effects (can't just say there are none without describing how that conclusion was reached).

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1371:**

*(Section 5.3.13.2.4.4, Page 5-607)*

**Highway 89 SRMA**

• ***Operation Effects:*** Explain why there would be no direct effects (can't just say there are none without describing how that conclusion was reached).

**Add to the end of the last sentence:** “, which could affect the recreation experience for public land users.”

**Historic Trails**

• **Construction Effects:** *1st line of 1st paragraph* – these impacts would be “moderate” (not minor) ... blocking trail access for up to 8 hours would greatly these users.

*1st line of 2nd paragraph* – these impacts would be “moderate” (not minor) for the same reason as described above.

• **Operation Effects:** *Last sentence* – explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).

**Add to the end of the last sentence:** “, which could affect the recreation experience for public land users.”

**Paria Canyons and Plateaus SRMA**

• **Construction Effects:** *Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).*

• **Operation Effects:** *Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1372:**

*(Section 5.3.13.2.4.4, Page 5-608)*

**OHV Use and Hunting**

• **Construction Effects:** *1st line of 1st paragraph* – these impacts would be “moderate” (not minor) ... blocking access for up to 8 hours would greatly these users.

• **Operation Effects:** *Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).*

**Add to the end of the last sentence:** “, which could affect the recreation experience for public land users.”

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1373:**

*(Section 5.3.13.2.4.5, Page 5-608)*

**Historic Trails**

• **Construction Effects:** *1st line of 1st paragraph* – these impacts would be “moderate” (not minor) ... blocking access for up to 8 hours would greatly these users.

• **Operation Effects:** *Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).*

**Add to the end of the last sentence:** “, which could affect the recreation experience for public land users.”

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1374:**

*(Section 5.3.13.2.4.5, Page 5-609)*

**Vermilion Cliffs Highways Scenic Drive**

• **Construction Effects: 1st line of 1st paragraph** – these impacts would be “moderate” (not minor) ... blocking access for up to 8 hours would greatly these users. Replace “may” with “would.” Also add space after “Route 9” on line 5 of this paragraph.

**Last sentence of 2nd paragraph** – users would also be impacted by changes in the visual landscape, which would affect their recreational experience.

• **Operation Effects:** Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).

**Last sentence** – users would also be impacted by changes in the visual landscape, which would affect their recreational experience.

**Arizona Strip Pull-Off**

• **Construction Effects:** Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).

*Need to describe why impacts to recreational users would be minimal when the new transmission would be seen. Seems to me that the impact would be “moderate” not “minor.”*

• **Operation Effects:** Explain why there would be no direct effects (can’t just say there are none without describing how that conclusion was reached).

*Need to describe why impacts to recreational users would be minimal when the new transmission lines would be seen. Seems to me that the impact would be “moderate” not “minor” to a user’s experience.*

**UDWRe Response:**

The text has been revised to address this comment.

**BLM Comment 1375:**

*(Section 5.3.13.2.4.6, Page 5-609)*

**OHV Use**

**Construction Effects: 1st line of 1st paragraph** – these impacts would be “moderate” (not minor) ... blocking access for up to 8 hours would greatly these users.

**UDWRe Response:**

The maximum potential duration of OHV access closure would be 8 hours; access to all recreational trails and roads would be maintained by temporary access measures, with potential wait times of 0 to 15 minutes. Therefore, the potential effects on recreational users would be minor, because the normal access route could be unavailable for a short period of time. The text has been edited for clarity.

**BLM Comment 1376:**

*(Section 5.3.13.2.4.6, Page 5-610)*

**OHV Use**

• **Operation Effects:** *Explain why there would be no direct effects and minor effects on OHV users (need to provide rationale for our conclusions).*

**Sand Mountain SRMA**

• **Construction Effects: 5th line of 1st paragraph** – *these impacts would be “moderate” (not minor) ... blocking access to a major recreational use area would greatly affect these users.*

• **Operation Effects: 1st paragraph** – *explain why there would be no direct effects (need to provide rationale for our conclusion).*

**2nd paragraph** – *Need to describe why indirect impacts to recreational users would be minimal when the new transmission lines would be seen. Seems to me that the impact would be “moderate” not “minor” to a user’s experience.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1377:**

*(Section 5.3.13.2.4.6, Page 5-611)*

**Hurricane Cliffs Non-Motorized Trail System**

• **Construction Effects: 1st line of 1st paragraph** – *these impacts would be “moderate” (not minor) ... blocking access for up to 8 hours would greatly affect these users.*

• **Operation Effects:** *Explain why there would be no direct effects (need to provide rationale for our conclusion).*

*Also need to describe why indirect impacts to recreational users would be minimal when the new transmission lines would be seen. Seems to me that the impact would be “moderate” not “minor” to a user’s experience.*

**Frog Hollow OHV Area**

• **Construction Effects: 1st sentence** – *Explain why there would be no direct effects (need to provide rationale for our conclusion).*

• **Operation Effects:** *Explain why there would be no direct effects (need to provide rationale for our conclusion). Also need to describe why indirect impacts to recreational users would be minimal when the new transmission lines would be seen. Seems to me that the impact would be “moderate” not “minor” to a user’s experience.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1378:**

*(Section 5.3.13.2.4.7, Page 5-612)*

**Construction Effects**

**2nd line of 1st paragraph** – *Insert “moderate temporary” before “direct effects.” Blocking access and restricting recreation activities would affect greatly these users.*

**Operation Effects**

*Explain why there would be no direct effects (need to provide rationale for our conclusion). Also need to describe why indirect impacts to recreational users would be minimal when the new transmission lines would be seen. Seems to me that the impact would be “moderate” not “minor” to a user’s experience.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1379:**

*(Section 5.3.13.2.4.8, Page 5-612)*

**Construction Effects**

*1st line of 1st paragraph – these impacts would be “moderate” (not minor) ... blocking access for up to 4 hours would affect these users in more than just a “minor” way.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1380:**

*(Section 5.3.13.2.4.8, Page 5-613)*

**Operation Effects**

*Explain why there would be no direct effects (need to provide rationale for our conclusion). Also need to describe why indirect impacts to recreational users would be minimal when the new transmission lines would be seen. Seems to me that the impact would be “moderate” not “minor” to a user’s experience.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1381:**

*(Section 5.3.13.2.5.1, Page 5-613)*

**OHV Use**

*Construction Effects: 1st and 2nd lines of 2nd paragraph – BLM agrees with the statement that “changes in visual resources” would cause temporary indirect effects. Please also add this statement/analysis to each of the pipeline alignment alternatives.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1382:**

*(Section 5.3.13.2.5.1, Page 5-614)*

**OHV Use**

**Operation Effects:** *Need to expand on the discussion about why indirect impacts to recreational users would occur due to viewing a new transmission line.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1383:**

*(Section 5.3.13.2.5.2, Page 5-615)*

**Operation Effects**

*Explain why there would be no direct effects (need to provide rationale for our conclusion). Also need to expand on the discussion about why indirect impacts to recreational users would occur due to viewing a new transmission line.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1384:**

*(Section 5.3.13.2.6, Page 5-615)*

**NEW SUB-SECTION:** *Need to add a discussion of the effects of the No Action Alternative (which is currently missing).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1385:**

*(Section 5.3.13.3, Page 5-615)*

**3rd bullet:** *Replace “would” with “may” – we (the BLM) don’t know for sure that LPP access roads on public land would be closed. For example, in areas of flat topography and open terrain that is sparsely vegetated, we’d be better off leaving the route open to prevent OHV users from driving around a closure (and causing more damage than would occur from leaving the road open).*

**6th bullet:** *Replace “would” with “may” (for the same reason as above). Also, if routes are permanently closed, we need to include that restoration of the area would occur.*

**UDWRe Response:**

**For analytical purposes it was assumed that the actions described would take place.**

**Note that the text before the bullets states “...during construction:”**

**BLM Comment 1386:**

*(Section 5.3.13.4.1, Page 5-616)*

**Last line of 1st and 2nd paragraphs** – *Impacts would be “moderate,” not “minor”.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1387:**

*(Section 5.3.13.4.1, Page 5-617)*

**Last sentence of 6th paragraph** – “These potential cumulative effects on recreation resources would be short-term.”

**Delete this sentence** *(these impacts would be long-term, not short-term – i.e., new recreational opportunities would be provided, which are long-term).*

**Last sentence of 7th paragraph** – Delete this sentence *(these impacts are direct, not cumulative).*

**UDWRe Response:**

**UDWRe’s view is that the comment is not applicable to the Recreation Resources Study Report.**

**BLM Comment 1388:**

*(Section 5.3.13.4.1, Page 5-617 to 5-618)*

*“There are ongoing public efforts to fund construction of another replica set at the Paria Movie site. The BLM has plans to expand this site by improving interpretive exhibits, and ultimately intends to make it an equestrian trailhead.” Delete this content.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1389:**

*(Section 5.3.13.4.4, Page 5-618)*

**2nd line of 1st paragraph:** Delete “significant” – impacts are being greatly overstated.

**6th line of 1st paragraph:** Delete “significantly” – impacts are being greatly overstated.

**Last sentence of 1st paragraph:** Delete – impacts are being greatly overstated.

**Last sentence of 2nd paragraph:** Delete end of sentence – it should end with “and management pond system.” Then add a new sentence which reads “However, developing these new trails would alleviate some of the lost opportunities due to construction of the reverse osmosis treatment facility, resulting in moderate cumulative impacts on recreation resources in the Sand Mountain SRMA.”

*We also need to stress that impacts to recreation from this alternative would be VERY limited in extent – i.e., they would only occur in the St. George area. The ENTIRE remaining LPP project area would have NO cumulative impacts (or direct and indirect impacts, for that matter).*

**UDWRe Response:**



While the text has been revised to address some of the comments, UDWRe does not believe that impacts “are being greatly overstated”.

**BLM Comment 1390:**

*(Section 5.3.13.5.2.1, Page 5-620)*

*2nd paragraph under “Indirect Effects”: Add that there would be temporary changes in views due to penstock construction.*

**UDWRe Response:**

**UDWRe’s view is that the comment is not applicable to the Recreation Resources Study Report.**

**BLM Comment 1391:**

*(Section 5.3.13.5.3.1, Page 5-620)*

***Indirect Effects:***

- ***4th line of 1st paragraph*** – replace “could” with “would” (these effects **WOULD** occur).
- ***1st line of 2nd paragraph*** – replace “could” with “would” (these effects **WOULD** occur).
- ***2nd line of 2nd paragraph*** – Delete “minor” (viewing new transmission lines in a relatively undeveloped, wild region would not be “minor.”
- ***3rd line of 2nd paragraph*** – replace “could” with “would” (these effects **WOULD** occur).

**UDWRe Response:**

**The text has been revised to address this comment.**

**BLM Comment 1392:**

*(Section 5.3.13.5, Page 5-621)*

**Direct Effects:**

- *We need to stress that impacts to recreation from this alternative would VERY limited in extent – i.e., they would only occur in the St. George area. The ENTIRE remaining LPP project area would have NO direct impacts. Thus, please add the following sentence to the end of the 2nd paragraph – “However, the majority of the project area would experience no unavoidable adverse effects to recreation resources since no facilities would be constructed away from the St. George/Hurricane areas.”*

**Indirect Effects:**

- *We need to stress that impacts to recreation from this alternative would VERY limited in extent – i.e., they would only occur in the St. George area. The ENTIRE remaining LPP project area would have NO indirect impacts. Thus, please add the following sentence to the end of the 2nd paragraph – “However, the majority of the project area would experience no unavoidable adverse effects to recreation resources since no facilities would be constructed away from the St. George/Hurricane areas.”*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1393:**

*(Section 5.3.13.5.6, Page 5-621)*

*NEW SUB-SECTION: Need to add a discussion of the effects of the No Action Alternative (which is currently missing).*

**UDWRe Response:**

**No Action would be taken, and there would be no effects on recreation resources and their use.**

**BLM Comment 1394:**

*(Section 5.3.14.1.1, Page 5-624)*

**First paragraph**

- **10th line:** Should be "... primary land uses ..."
- **11th line:** Middle of line should read "... the LPP Project, are livestock grazing (which occurs on both)".
- **12th line:** Beginning of line should read "private and public land) and recreation. South of the ..."
- **14th line:** Delete "natural" at the end of the line. (There is no such thing as an "unnatural" spring.)
- **16th line:** Insert "recreation," before "livestock grazing".

**Second paragraph**

- **2nd line:** Insert "sagebrush," before "pinyon-juniper".

**Third paragraph**

- **5th line:** Replace "National Park Service" with "GCNRA".
- **6th line:** Insert "and KCWCD" before "Figure 5-176".

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1395:**

*(Section 5.3.14.1.1, Page 5-624)*

*Item in bullet list should be "Designated Wilderness and Wilderness Study Areas".*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1396:**

*(Section 5.3.14.1.1, Page 5-624)*

*"In Utah, land uses consist of urban use, agricultural use (mainly irrigated farmland), livestock grazing, and protected land such as state or national parks and monuments." Where did this list*

*come from? Does “urban” encompass residential, commercial and industrial uses? Recreation should be added to this list, and probably others that aren’t coming to mind.*

**UDWRe Response:**

**This list came from the compilation of multiple land use plans. Yes, “urban” does encompass the stated uses in your comment questions. The suggested “recreation addition” edit has been incorporated into the text.**

**BLM Comment 1397:**

*(Section 5.3.14.1.2, Page 5-624)*

*“Description of Baseline Conditions. Land use includes the following topics that are generally associated with land management plans and policies.” The list provided here along with this intro statement is confusing. Why are these items grouped together into this section? Shouldn’t WSAs and WSRs and many other of these be analyzed separately?*

**UDWRe Response:**

**This list came from the compilation of multiple land use plans. Each one of these topics was analyzed separately in the Land Use Study plan.**

**BLM Comment 1398:**

*(Section 5.3.14.1.2.1, Page 5-626)*

**Reclamation-Administered Land**

• *9th line: Replace “public” with “federal” (the only “public” land is BLM-administered land – this term does not apply to NPS or Reclamation land).*

**BLM-Administered Land**

**Grand Staircase-Escalante National Monument**

- *Insert the title “Grand Staircase-Escalante National Monument” above the paragraph addressing that monument (as is done for the other field offices).*
- **Lines 3 and 6:** *Delete “the” before “GSENM” – not proper to use “the” with a proper name.*
- **6th line:** *Delete the commas after “November” and “February”.*

**Kanab Field Office**

- **2nd line:** *Delete the comma after “October”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1399:**

*(Section 5.3.14.1.2.1, Page 5-626)*

**BLM-Administered Land**

*“There are approximately 15,000 acres of land within the GSENM boundary that are privately owned.” This statement should explain that these are inholdings. There are no private lands within GSENM. Additionally, how many acres of inholdings exist within other public land*

*administrative boundaries? GSENM is not the only entity with private holdings within its boundaries. Why is it singled out?*

**UDWRe Response:**

**UDWRe disagrees with the comment's contention that there is no privately owned land within GSENM. Private land ownership was present within the area designated to be GSENM before its designation and, barring any acquisitions by governmental bodies, the land remains privately owned. GSENM was "singled out" because it is the only public land administrative boundary where the statement makes sense. Obviously there are private lands within the various BLM field office boundaries.**

**BLM Comment 1400:**

*(Section 5.3.14.1.2.1, Page 5-626)*

*The GSENM was created to protect a spectacular array of historic, biological, geological, paleontological, and archaeological objects. Protection and support of each of these characteristics are discussed throughout the GSENM MMP. -*

*This is an incomplete paraphrased extraction from the Proclamation. Scientific Study is a primary intention of the Monument. This paragraph as presented missed this importance of scientific study of the historic, biological, geological, paleontological, and archaeological objects*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1401:**

*(Section 5.3.14.1.2.1, Page 5-627)*

**St. George Field Office**

• *General comment: Add the same type of bullet list summarizing land use plan objectives as is included for Kanab Field Office.*

**Arizona Strip Field Office**

• **General comment:** *Add the same type of bullet list summarizing land use plan objectives as is included for Kanab Field Office.*

• **1st paragraph:** *Rewrite to read "In 2008, the BLM signed a ROD approving the Resource Management Plan (BLM 2008b) for the Arizona Strip Field Office.*

• **2nd paragraph, 2nd line:** *Rewrite to read "The field office manages all or part of four wilderness areas ..." Also, unbold "wilderness areas" and "Old Spanish National Historic Trail".*

• **2nd paragraph, 4th line:** *Delete "(BLM Arizona 2012)". (Not sure what this reference is supposed to be, but wild and scenic river suitability determinations were included in the 2008 RMP, so that is what should be referenced, if anything is.)*

**UDWRe Response:**

**The suggested edits from the third, fourth and fifth bullets of the above comment have been incorporated.**

**BLM Comment 1402:**

*(Section 5.3.14.1.2.3, Page 5-630 and 5-631)*

**BLM**

• **Last line of 1st paragraph & last line of 2nd paragraph:** *BLM 1999a is the Dixie RMP ... why is that cited in reference to floodplain management for all the BLM offices involved in the LPP project? National policy should be cited, versus the Dixie RMP. Please correct this.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1403:**

*(Section 5.3.14.1.2.5, Page 5-632)*

*WSAs are managed under BLM's Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM Manual H-8550-1) (BLM 1995) - This is outdated information WSA's are now managed under Manual 6330 – Management of Wilderness Study Areas (7/13/2012)*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1404:**

*(Section 5.3.14.1.2.5, Page 5-632)*

**Section Heading**

• *Should be “Designated Wilderness and Wilderness Study Areas”.*

**First paragraph**

• **General comment:** *Please note that “Vermilion” is spelled with only one “L”.*

• **1st paragraph:** *Unless referring to a specific wilderness area or WSA, these terms should not be capitalized. Please correct this.*

• **1st paragraph, 7th/8th lines:** *Should read “features include Paria Canyon-Vermilion Cliffs Wilderness, The Cockscomb WSA, Paria-Hackberry WSA, Cottonwood Point Wilderness, Canaan Mountain Wilderness, Spring Creek Canyon (??? Not sure of the designation for this area), and Wahweap WSA ...”*

• **2nd paragraph, 5th/6th lines:** *WSAs are not administered as designated wilderness – similar, but not the same. What does the Interim Management Policy say about this?*

**UDWRe Response:**

**The suggested edits from the first, second, third and fourth bullets of the above comment have been incorporated.**

**BLM Comment 1405:**

*(Section 5.3.14.1.2.5, Page 5-632)*

*The congressionally-authorized utility corridor that the LPP Project would be constructed **within** is adjacent to The Cockscomb WSA. – It is adjacent to the WSA. Figures are not complete in the document so this reviewer is unable to verify the corridor to the WSA Boundary.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1406:**

*(Section 5.3.14.1.2.6, Page 5-634)*

*3rd paragraph, 2nd line: “resource management plans” should not be capitalized.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1407:**

*(Section 5.3.14.1.2.7, Page 5-636)*

*1st paragraph, line 1: Rewrite the end of the line to read “... information obtained from the BLM”.*

*1st paragraph, line 4: Rewrite beginning of the line to read “cross land available for grazing. Approximately ...”*

*2nd bullet list:*

- 3rd bullet – Rewrite to read “Destruction of fences, water pipelines, corrals, or other range improvements”*
- 4th bullet – Rewrite to read “Disruption to grazing rotations”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1408:**

*(Figure 5-178, Page 5-637)*

*The map shows some land in Arizona as “managed by other federal agency” – this represents available grazing allotments in Arizona that are managed by a BLM Utah office (either St. George Field Office or Kanab Field Office). For the purposes of this map, change these areas to also be “available” and delete the category of “managed by other federal agency”.*

**UDWRe Response:**

**The figure has been revised to address the comment.**

**BLM Comment 1409:**

*(Section 5.3.14.1.2.7, Page 5-638)*

*Lines 1, 6, 7: Delete “the” before “Glen Canyon”.*

*Line 8: Replace “GCNRA” with “The BLM”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1410:**

*(Section 5.3.14.1.2.8, Page 5-638)*

*1st paragraph, Line 5: The acronyms “RMP” and “ROD” have already been defined in Chapter 5, so don’t do so again here.*

*1st paragraph, Line 6: Delete “field” (GSENM is not a field office).*

*Paragraph below bullet list, line 2: Delete “field” (GSENM is not a field office).*

*Paragraph below bullet list, line 3: Insert “, with appropriate site-specific environmental analysis” after “utility corridors”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1411:**

*(Section 5.3.14.1.2.8, Page 5-639)*

*Paragraph on GSENM*

• *Lines 1, 2: Should read “The GSENM MP has planning measures in place that allow for issuing a ROW within the Congressionally-designated utility corridor along Highway 89. It states that”.*

*Add a paragraph on the Arizona Strip Field Office RMP – use the following text:*

*“The Arizona Strip Field Office RMP emphasizes protection and restoration of the natural and cultural resources while still providing for resource use and enjoyment. The RMP proposes a combination of management actions including allowing natural processes to continue, and protecting the remote settings that currently exist in the field office. The RMP encourages the use of designated utility corridors to the extent possible, but allows variances consistent with other RMP provisions. The RMP discourages new ROWs in avoidance areas (such as ACECs, national historic trails, and riparian areas).”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1412:**

*(Section 5.3.14.1.2.8, Page 5-640)*

*3rd complete paragraph, 2nd line: “Interstate” should not be capitalized.*

*5th complete paragraph, 3rd line: Delete “acquisition”.*



**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1413:**

*(Section 5.3.14.1.2.9, Page 5-640 and 5-641)*

*1st paragraph, 2nd and 3rd lines: Change the name of the trail to “Old Spanish National Historic Trail”.*

*3rd paragraph line 3: Please insert “tribal” after “also crosses”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1414:**

*(Section 5.3.14.1.2.9, Page 5-641)*

*“The BLM is responsible for ensuring that the scenic values of the public lands are considered before allowing uses that maybe have negative visual effects. The BLM accomplishes this through Visual Resource Management (VRM) system, a system which involves inventorying scenic values and establishing management objectives for those values through the resource management planning process, and then evaluating proposed activities to determine whether they conform with the management objectives (BLM 2007).” Why is this content in this section? This is content for the visuals section.*

**UDWRe Response:**

**The paragraph has been removed.**

**BLM Comment 1415:**

*(Section 5.3.14.1.2.10, Page 5-642)*

*2nd line on page: Add “ACECs are managed as “avoidance areas”, meaning areas with sensitive resource values where ROWs, land use permits, leases, and easements are strongly discouraged. Authorizations made in ACECs would have to be compatible with the purpose for which the ACEC was designated and not otherwise feasible on lands outside the ACEC (BLM 2008a).”*

*2nd sentence on page: Rewrite to read “The following restrictions apply to all Arizona Strip ACECs:*

- Motorized and mechanized vehicle use will be limited to existing or designated routes.*
- The BLM will authorize only temporary upgrading of existing roads.*
- New roads will be authorized on a temporary basis only.*
- New mineral material disposal sites will not be authorized.*

*The following restriction applies to the Kanab Creek ACEC, through which the proposed LPP would cross:*

- *Riparian areas will be managed to achieve and/or maintain proper functioning condition.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1416:**

*(Table 5-116, Page 5-642)*

*There are some errors in this table that need to be corrected:*

- *Johnson Spring ACEC was designated for the protection of the threatened Siler pincushion cactus and cultural resources.*
- *Shinarump ACEC was designated for the protection of the threatened Siler pincushion cactus.*
- *Kanab Creek ACEC was designated for the protection of the endangered southwestern willow flycatcher habitat, riparian and scenic values, and cultural resources.*
- *Moonshine Ridge ACEC was designated for the protection of the threatened Siler pincushion cactus and cultural resources.*
- *Lost Spring Mountain ACEC was designated for the protection of the threatened Siler pincushion cactus and cultural resources.*
- *Fort Pearce ACEC (5,724 acres) was designated for the protection of the threatened Siler pincushion cactus. [not soils and riparian]*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1417:**

*(Section 5.3.14.1.2.11, Page 5-642)*

*“In the 1970s, land use began to change from rural, agricultural and open space to more urban developed area.” This may be true for portions of the project area but is not the case for its entirety.*

**UDWRe Response:**

**This may not be the case for the entire project area but for the municipalities that it encounters it is indeed the case and that is what this comment is referring to. The general growth occurs within the municipalities and not in rural, agricultural and open space areas.**

**BLM Comment 1418:**

*(Section 5.3.14.2.1, Page 5-647)*

***Significance Criteria.*** *Please explain how these were determined. Do they follow policy?*

**UDWRe Response:**

Significance criteria were established in consultation with the lead and cooperating agencies and policy was followed.

**BLM Comment 1419:**

*(Section 5.3.14.2.1, Page 5-648)*

*The second part of the listed significance criteria makes no sense ... how would there be **an effect on a land use plan**?*

**UDWRe Response:**

**The term land use plan has been removed.**

**BLM Comment 1420:**

*(Section 5.3.14.2.1.1, Page 5-648)*

*1st bullet: Should read “LPP Project activities that would not be in conformance with management direction set forth in federal RMPs, and state and local general plans.*

*2nd bullet: This is rather vague ...what exactly is it supposed to mean?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1421:**

*(Section 5.3.14.2.1.5, Page 5-648)*

**Section Heading**

- *Should be “Designated Wilderness and Wilderness Study Areas”.*

*As written, this statement would violate federal law ... BLM cannot authorize something that would result in a wilderness area being converted to another type of land characterization. The point here should be potential to the four wilderness characteristics of:*

- *Naturalness*
- *Outstanding opportunities for solitude*
- *Outstanding opportunities for primitive and unconfined recreation*
- *Supplemental values (such as ecological, geological, or other features of scientific, educational, scenic, or historical value).*

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment has been incorporated.**

**BLM Comment 1422:**

*(Section 5.3.14.2.1.6, Page 5-648)*

*“Crossing” the eligible/suitable river segment isn’t the point – the significance criteria should address potential impacts to the following:*

- *Preservation of the stream’s free-flowing nature*

- *Preservation, protection, and, to the greatest extent possible, enhancement of identified outstandingly remarkable values*
- *Preservation of characteristics that establish the potential classification as Wild, Scenic, or Recreational*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1423:**

*(Section 5.3.14.2.1.7, Page 5-648)*

*The correct significance criteria for grazing land should be the reduction in AUMs (or available forage), not the termination of grazing permits/leases. (The term “contract” is incorrect.)*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1424:**

*(Section 5.3.14.2.1.8, Page 5-648)*

*The correct significance criteria for trails/national historic trails should be impacts on the values for which the trail was created.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1425:**

*(Section 5.3.14.2.1.9, Page 5-649)*

*The correct significance criteria for ACECs should be impacts on the relevant and important values for which the area was designated (not a “change in status of [the] ACEC”).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1426:**

*(Section 5.3.14.2.2, Page 5-649 and beyond)*

*Land Use Effects – Please discuss in this section those instances where the Proposed Action and Alternatives do not meet LUP decisions.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1427:**

*(Section 5.3.14.2, Page 5-649)*

**General comment:** *Please reorganize this part of the effects analysis as follows:*

*5.3.14.2. Environmental Effects*

*5.3.14.2.1 Significance Criteria*

*5.3.14.2.2 Proposed Action*

*5.3.14.2.2.1 Land Ownership and Management*

*5.3.14.2.2.2 Farmland*

*5.3.14.2.2.3 Floodplain*

*Etc.*

*5.3.14.2.3 Existing Highway Alternative*

*5.3.14.2.3.1 Land Ownership and Management*

*5.3.14.2.3.2 Farmland*

*5.3.14.2.3.3 Floodplain*

*Etc.*

*5.3.14.2.4 SE Corner Alternative*

*5.3.14.2.4.1 Land Ownership and Management*

*5.3.14.2.4.2 Farmland*

*5.3.14.2.4.3 Floodplain*

*Etc.*

*5.3.14.2.5 No Lake Powell Water Alternative*

*5.3.14.2.5.1 Land Ownership and Management*

*5.3.14.2.5.2 Farmland*

*5.3.14.2.5.3 Floodplain*

*Etc.*

*5.3.14.2.6 No Action Alternative*

*5.3.14.2.6.1 Land Ownership and Management*

*5.3.14.2.6.2 Farmland*

*5.3.14.2.6.3 Floodplain*

*Etc*

*This is how all the other resource sections are organized. Please change this, to be consistent with the rest of the PLP.*

**UDWRe Response:**

**UDWRe's view is that the organization of the text is appropriate.**

**BLM Comment 1428:**

*(Section 5.3.14.2.2, Page 5-649)*

**1st paragraph, 4th sentence:** *Also roads (please add this to the list of project facilities).*

**1st paragraph, last sentence:** *This statement is not true for the majority of the BLM land – the ROW area (penstock, transmission lines, roads) would remain open space for multiple uses (where compatible with the ROW use).*

**2nd paragraph, 1st sentence:** *But much of the penstock would be OUTSIDE the designated utility corridors, especially under the Proposed Action.*

*2nd paragraph, 2nd sentence: Should read "... portion of private, incorporated, and public land would be disturbed."*

**UDWRe Response:**

**The suggested edit from the fourth paragraph of the above comment has been incorporated.**

**The text has been revised to address the comment.**

**BLM Comment 1429:**

*(Section 5.3.14.2.2.1, Page 5-650)*

*5th line: End of line should read "... of the proposed alignment. All".*

*6th/7th lines: Should read "... located on public land, requiring ROWs from the BLM. The BPS-4 (Alt.) ..."*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1430:**

*(Section 5.3.14.2.2.1, Page 5-651)*

*2nd line on page: "Electrical Transmission Lines System" should not be capitalized.*

*5th/6th lines: The acronyms "RMP" and "ROD" have already been defined in Chapter 5, so don't do so again here.*

*7th lines: Delete "the" before "Reservation land".*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1431:**

*(Section 5.3.14.2.2.2, Page 5-652)*

*1st paragraph, line 3: Delete "the" before "GSENM".*

*2nd paragraph, line 1: Should be "effect" (not "affect").*

*2nd paragraph, line 3: Delete "or better than".*

*3rd paragraph, line 1: "Electrical Transmission Lines System" should not be capitalized.*

*3rd paragraph, line 2: Should be a period after "two reasons" (not a colon).*

*Last two lines on page: Delete "AD 1006".*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1432:**

*(Section 5.3.14.2.2.3, Page 5-654)*

*1st paragraph, 1st sentence: The acronym “FEMA” has already been defined in Chapter 5, so don’t do so again here.*

*3rd paragraph, 1st line: Replace “floodway” with “floodplain”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1433:**

*(Table 5-118, Page 5-654)*

*Add “SE Corner” to applicable waterways in column 3 (the Proposed Action and Existing Highway alternatives are all that is included).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1434:**

*(Section 5.3.14.2.2.3, Page 5-655)*

*Last sentence: Explain why the project would have only minor effects on vegetation and habitat – existing narrative doesn’t say enough to support that conclusion.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1435:**

*(Section 5.3.14.2.2.4, Page 5-655)*

**Waste Disposal**

- *1st paragraph, 4th line: What is pipeline “constriction”?*
- *1st paragraph, last sentence: What about trash generation in Arizona? Would it be disposed of in Utah? (There isn’t much capacity in Arizona, except in the St. George area.)*
- *2nd paragraph, 4th line: Where are these “nearby spoil disposal locations”? Need to identify those NOW.*

**UDWRe Response:**

**1<sup>st</sup> paragraph, 4<sup>th</sup> line – The text was revised to correct the typographical error.**  
**1<sup>st</sup> paragraph, last line – The analysis shows that there is capacity in Arizona.**



**2<sup>nd</sup> paragraph, 4<sup>th</sup> line - A figure callout has been added to address the last comment.**

**BLM Comment 1436:**

*(Section 5.3.14.2.2.5, Page 5-656)*

**Section Heading**

- Should be “Designated Wilderness and Wilderness Study Areas”.

**Line 2:** Delete “the” before “GSENM”.

**Line 3:** Rewrite to read “does not cross any designated wilderness, wilderness study area (WSA), or lands inventoried to possess wilderness characteristics ...”

**Line 4:** Should read “... WSA is the only WSA that the LPP Project ...”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1437:**

*(Section 5.3.14.2.2.6, Page 5-656)*

**2<sup>nd</sup> paragraph, line 1:** Should read “The proposed Glen Canyon to Buckskin 230-kV transmission line would cross over the”.

**2<sup>nd</sup> paragraph, line 4:** Should read “line) north of the Paria Canyon-Vermilion Cliffs Wilderness boundary”.

**2<sup>nd</sup> paragraph, line 6:** Should read “distinguish the proposed Glen Canyon to Buckskin transmission line from ...”

Note that “transmission line” should not be capitalized anywhere in this paragraph.

**3<sup>rd</sup> paragraph, line 1:** Replace “easement” with “area”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1438:**

*(Section 5.3.14.2.2.7, Page 5-656 and 5-657)*

**1<sup>st</sup> paragraph, line 1:** Replace “easement” with “ROW”.

**1<sup>st</sup> paragraph, line 7:** Replace “rotations” with “activities”.

**1<sup>st</sup> paragraph, line 8:** Delete “rotation patterns and”.

**1<sup>st</sup> paragraph, line 9:** Delete “size and configuration”.

**1<sup>st</sup> paragraph, line 12:** Replace “leaseholders” with “permittees”.

**2<sup>nd</sup> paragraph, line 1:** Replace “annual and endemic species” with “an approved seed mix”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1439:**

*(Section 5.3.14.2.2.7, Page 5-657)*

*“affected areas would be reseeded with annual and endemic species”  
BLM would have an approved seed mix that must be followed and used.  
Native species should be used on GSENM.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1440:**

*(Section 5.3.14.2.2.7, Page 5-659)*

***2nd paragraph, 1st sentence:** While the electrical lines would be mostly constructed within existing utility corridors, there would still be some loss of vegetation. That should be acknowledged.  
**2nd paragraph, 8th line:** Need to explain why road construction would not “disturb grazing land” ... it **WOULD** result in loss of vegetation, which would affect livestock forage.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1441:**

*(Section 5.3.14.2.2.7, Page 5-661)*

***2nd paragraph (all except the first sentence):** This would not apply to federal land ... need to make it clear that this only applies to private land.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1442:**

*(Section 5.3.14.2.2.8, Page 5-661)*

***2nd line:** The acronym “RMP” has already been defined in Chapter 5, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1443:**

*(Table 5-124, Page 5-661)*

***2nd row, 5th column:** Add “/LPP Facility” to the column heading.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1444:**

*(Section 5.3.14.2.2.8, Page 5-662)*

**2nd paragraph:** Delete “the” before “GSENM”.

**3rd paragraph:** “electrical transmission lines system” should not be capitalized.

**3rd paragraph:** Mentions the SE Corner Alternative, and how much distance it would deviate from the utility corridor, “ but it doesn’t state how far the Proposed Action alignment would deviate from the utility corridor. Please add this.

**7th paragraph:** Split the first sentence into its own paragraph, so that it is discussed separately from public lands.

**8th paragraph:** An easement (or ROW) would also have to be negotiated for the SE corner alternative. Add that here.

**UDWRe Response:**

**The suggested edits from the first, second and fourth paragraphs of the above comment have been incorporated.**

**The text has been revised to address the comment in the third paragraph.**

**BLM Comment 1445:**

*(Section 5.3.14.2.2.9, Page 5-663)*

*The impact analysis for NSHTs should discuss not just the physical crossings but the impacts to the settings associated with the trails.*

**UDWRe Response:**

**This has been addressed in the last paragraph and bullet points.**

**BLM Comment 1446:**

*(Section 5.3.14.2.2.9, Page 5-664)*

**1st paragraph:** Rewrite to read “The re- establishment of vegetation to preconstruction conditions would likely take more than one growing season depending on ...”

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1447:**

*(Section 5.3.14.2.2.10, Page 5-664)*

**1st paragraph, 3rd sentence:** Rewrite to read “The Kanab Creek ACEC ... Kaibab-Paiute Indian Reservation; Kanab Creek is a headwater tributary ...”

**1st bullet:** Delete. This is not a management action from the Arizona Strip RMP.

**2nd bullet:** Please revise this management action to read “Individual land use authorizations (ROWs, permits, easements) will be evaluated ...”

**3rd bullet:** Please revise this management action to read “New land use authorizations will be discouraged in the ACEC. Such new uses will only allowed when no reasonable alternative location exists and effects can be mitigated.”

**4th bullet:** Delete – this is not applicable for ACECs on the Arizona Strip.

Please add the following management direction items to this list:

- Motorized and mechanized vehicle use will be limited to existing or designated routes.
- The BLM will authorize only temporary upgrading of existing roads.
- New roads will be authorized on a temporary basis only.
- New mineral material disposal sites will not be authorized.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1448:**

(Section 5.3.14.2.2.11, Page 5-665)

**1st paragraph:**

- **Line 3:** Replace “appropriated” with “identified”.
- **Line 6:** Delete “wilderness areas/wilderness study areas” – those areas are already included in the reference to “BLM land” and “U.S. Forest Service land”.
- **Line 7:** Replace “endangered species (TES)” with simply “designated”.

**Last line on page:** Insert a space between “10” and “year”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1449:**

(Section 5.3.14.2.2.11, Page 5-668)

**1st paragraph, line 2:** Please describe the “LUCIS® model”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1450:**

(Section 5.3.14.2.3.1, Page 5-670)

**Land Ownership and Management**

- **1st line:** Should read “There are locations along the Proposed Action alignment that could involve ...” Note: The BLM would not transfer title of land out of public ownership.
- **4th line:** Insert “potential” before “transfer of land”. Again note that the BLM would not transfer title of land out of public ownership.
- **5th/6th lines:** Delete “thus a minimum amount of land title transfer would be necessary.”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1451:**

(Section 5.3.14.2.3.1, Page 5-673)

*“The Proposed Action would not cross any designated Wild and Scenic Rivers or eligible segments. The Proposed Action would have no direct effects and no significant effects on Wild and Scenic Rivers or eligible WSR segments.”*  
*The proposed action crosses the Paria River which has WSR suitability.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1452:**

(Section 5.3.14.2.3.1, Page 5-673)

**Floodplain**

- **1st sentence:** Rewrite to read “The Proposed Action alignment was identified to minimize disturbance to floodplains.” (The statement as written is not correct for the Arizona portion of the proposed LPP.)

**Wilderness and Land with Wilderness Characteristics**

- **Section heading:** Should be “Designated Wilderness and Wilderness Study Areas”.
- **1st sentence:** Delete “which is managed as wilderness”.
- **2nd sentence:** Explain why the Proposed Action would have no direct effects on the Cockscomb WSA (because the pipeline and associated appurtenances would not be located within it???)
- **6th line:** Insert “therefore” after “The Proposed Action would”.

**Grazing Land**

- **2nd line:** Replace “utilization” with “use”.
- **3rd sentence:** Determination of significance is not just based on number of acres lost, but also the amount of forage permanently lost (expressed in Animal Unit Months) ... please add this information to this analysis.

**UDWRe Response:**

**The suggested edits from the first, second, third, fourth, fifth and sixth bullets of the above comment have been incorporated.**

Forage permanently lost cannot be expressed in Animal Unit Months without knowing which animals would have been using the acreage. Also, there is not unanimity in how to define the Animal Unit Months for any particular animal. Expressing the forage lost in acres removes this potential for disagreement and allows the individual to calculate the Animal Unit Months based on their preferred definition and particular animal of interest.

**BLM Comment 1453:**

(Section 5.3.14.2.3.1, Page 5-674)

*“The Proposed Action would cross trails and National Historic Trails in several places. These pipeline and penstock crossings would temporarily affect the trail during construction. The trail and surrounding areas would be restored back to original condition. Proposed Action operation would have no direct or indirect effects on the trail. The Proposed Action would have no significant effects on National Historic Trails.”*

*Several of the facilities are within the viewsheds of the NHTs which needs to be addressed.*

**UDWRe Response:**

**Your comment has been noted. Please note that this section of the text concerns land use.**

**BLM Comment 1454:**

(Section 5.3.14.2.3.1, Page 5-674)

**Rights-of-Way**

- **2nd line:** This statement about easement acquisition is not true for public land ... the BLM would not issue an easement, only a long-term ROW. Please correct this.
- **3rd sentence:** Need to explain why the effects on ROWs would be minor ... there is no real analysis here.

**Growth**

- **8th line:** Delete “wilderness areas/wilderness study areas” – those areas are already included in the reference to “BLM land” and “U.S. Forest Service land”.

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1455:**

(Section 5.3.14.2.3, Page 5-674)

*The conclusions in the “Growth” section are accurate. LPP water is intended to enable significant projected human population growth and associated development to occur in Washington County (with LPP proponents arguing that that growth and development cannot be served by more localized water sources and improved water conservation). However, the conclusion here is that the LPP water would not have those significant growth effects. In addition, the section claims that “smart growth” land use development would preclude future effects on wildlife species and their habitats. While the “Vision Dixie” principles are intended to encourage such “smart growth”, is there any comprehensive effort to monitor all local land use*

*and zoning decisions in Washington County to know if these principles are actually being consistently followed?*

*Overall, it should not be assumed that “smart growth” would generally occur in the future, given the existing pattern of land use and zoning thus far, and of sprawl.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section.**

**BLM Comment 1456:**

*(Section 5.3.14.2.3.2, Page 5-675)*

**Land Ownership Rights-of-Way**

- **2nd line:** *This statement about easement acquisition is not true for public land ... the BLM would not issue an easement, only a long-term ROW. Please correct this.*
- **3rd sentence:** *Need to explain why the effects on ROWs would be minor ... there is no real analysis here.*

**Growth**

- **8th line:** *Delete “wilderness areas/wilderness study areas” – those areas are already included in the reference to “BLM land” and “U.S. Forest Service land”.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1454.**

**BLM Comment 1457:**

*(Section 5.3.14.2.3.2, Page 5-675)*

**Land Ownership and Management**

- **Line 1:** *Should read “There are locations along the Existing Highway alignment that could involve ...” Note: The BLM would not transfer title of land out of public ownership.*
- **3rd sentence/end of paragraph:** *Sentence should read “Penstock, pipeline and access road construction would not require transfer of land ownership.” Remainder of paragraph should be deleted.*
- **3rd paragraph, line 1:** *Add a comma after “management goals”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1458:**

*(Section 5.3.14.2.3.2, Page 5-676)*

**Wilderness and Land with Wilderness Characteristics**

- **Section heading:** *Should be “Designated Wilderness and Wilderness Study Areas”.*
- *Wouldn’t this alternative have the same impacts on wilderness and WSAs as the Proposed Action?*

**Wild and Scenic Rivers**



- **2nd sentence:** Should read “The Existing Highway Alternative would have no direct or indirect effects on Wild and Scenic Rivers.”

**Grazing Land**

- **2nd line:** Replace “utilization” with “use”.
- **3rd sentence:** Determination of significance is not just based on number of acres lost, but also the amount of forage permanently lost (expressed in Animal Unit Months) ... please add this information to this analysis.

**UDWRe Response:**

The text has been revised to address the comment.

Forage permanently lost cannot be expressed in Animal Unit Months without knowing which animals would have been using the acreage. Also, there is not unanimity in how to define the Animal Unit Months for any particular animal. Expressing the forage lost in acres removes this potential for disagreement and allows the individual to calculate the Animal Unit Months based on their preferred definition and particular animal of interest.

**BLM Comment 1459:**

(Section 5.3.14.2.3.2, Page 5-677)

**Areas of Critical Environmental Concern**

- **2nd sentence:** Please rewrite to read “The Existing Highway Alternative would have no direct or indirect effects on Areas of Critical Environmental Concern.”

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 1460:**

(Section 5.3.14.2.3.3, Page 5-677)

**Land Ownership and Management**

- **2nd paragraph:** Delete this paragraph from here and move to Section 5.3.14.2.2.1 (it is more appropriate there than here).

**UDWRe Response:**

The suggested edit has been incorporated.

**BLM Comment 1461:**

(Section 5.3.14.2.3.4, Page 5-679)

There is no transmission lines alternative – transmission lines are part of the other alternatives. This discussion on impacts should therefore be merged into the previous alternatives sections.

**Land Ownership and Management**

- Delete this text ... the information on land transfer is already discussed in the previous sections (under each alternative).

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1462:**

*(Section 5.3.14.2.3.5, Page 5-681)*

*“However, residential landscapes and the physical uses of those landscapes would be indirectly changed by converting residential landscapes to desert landscapes resulting from eliminating outdoor watering with culinary water.”*

*Altering a landscape scheme is not altering a land use. A “residential landscape” is not defined by a manicured well- watered lawn – a “residential landscape is one that associated with residential development.*

*“Therefore, outdoor use of residential land by residents would change and likely decrease or diminish to a minimum level.”*

*Research supporting this claim should be provided. There are numerous cities in even more arid environments than St George and their per capita water use is already much lower than in St George. Citizens of these cities (Phoenix, Tucson, Las Vegas, for example) do utilize the outdoor spaces around their homes.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1463:**

*(Section 5.3.14.2.3.5, Page 5-681)*

*“Eliminating residential outdoor watering with culinary water may result in some potential in-migrants to the St. George metropolitan area to settle in other communities where there would be no restrictions on outdoor watering of trees, shrubs, gardens, lawns and other vegetation. The increased cost of reverse osmosis water treatment passed onto water users in the form of higher water rates could result in some potential in- migrants to the St. George metropolitan area to settle in other communities with lower water rates.”*

*Please provide research and data to support these statements.*

**UDWRe Response:**

**UDWRe’s view is that no research needs to be conducted nor any data provided to support the economic law of supply and demand.**

**BLM Comment 1464:**

*(Section 5.3.14.2.3.4, Page 5-681)*

**Land Ownership and Management**

**• Line 12:** Delete “and would be a significant effect”. This alternative would not have a significant impact on land ownership and management ... the impact would be minimal – many

*communities operate under xeric landscape requirements and operate just fine. The impacts from No Lake Powell Water are GREATLY overstated.*

**Farmland**

- ***Last sentence:*** *Delete – the impacts from No Lake Powell Water are GREATLY overstated. Converting to treated water would not greatly affect farmland.*

**Other Land Uses**

- 3rd bullet should be “Designated Wilderness and Wilderness Study Areas”.

**UDWRe Response:**

**UDWRe’s view is that the text referenced in the first two bullets of the comment is appropriate as written.**

**The suggested edit from the third bullet of the above comment has been incorporated.**

**BLM Comment 1465:**

*(Section 5.3.14.3.1.6, Page 5-682)*

*“Non-reflective conductor wire would be installed over the Paria River canyon at the proposed transmission line crossing to minimize potential visual effects.” Non-specular wire is required for all transmission lines within GSENM.*

**UDWRe Response:**

**Your comment is noted.**

**BLM Comment 1466:**

*(Section 5.3.14.3.1, Pages 5-683 through 5-685)*

*These BMPs apply to all the LPP alternatives, so this heading should be revised to reflect that. Then Sections 5.3.14.3.2 and 5.3.14.3.3 can be eliminated.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1467:**

*(Section 5.3.14.3.1.1, Page 5-683)*

*The stated BMP would not be applicable to BLM-administered lands. First, BLM does not issue “construction easements” but instead the relevant ROW includes authorization for temporary construction areas. Second, BLM does not negotiate any sort of compensation for lost use (although the St. George Field Office may require some sort of compensation for loss of tortoise habitat).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1468:**

*(Section 5.3.14.3.1.3, Page 5-683)*

*2nd line: Replace “Proposed Action with “LPP alternatives”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1469:**

*(Section 5.3.14.3.1.4, Pages 5-683 and 5-684)*

*1st paragraph, line 5: Delete “need to”.*

*2nd paragraph, lines 1-2: Replace “Proposed Action with “LPP alternatives”.*

*2nd paragraph, lines 3-7: Delete all but “BLM policy does not authorize public land to be used for hazardous waste disposal unless such lands are first transferred out of public ownership.”*

*Please note that the other 3 BLM offices involved in the LPP project (GSENM, KFO, and ASFO) are not bound by direction from the St. George Field Office’s RMP, so do not cite that RMP.*

*BLM is, however, bound by agency policy (which is the language left in this paragraph from the above-described edits).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1470:**

*(Section 5.3.14.3.1.5, Page 5-684)*

*Section heading: Should be “Designated Wilderness and Wilderness Study Areas”.*

*2nd line: Replace “Proposed Action with “LPP alternatives”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1471:**

*(Section 5.3.14.3.1.6, Page 5-684)*

*2nd line: Middle of line should read “... because the project would not ...”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1472:**

*(Section 5.3.14.3.1.7, Page 5-684)*

*5th line: BLM does not compensate grazing permittees for loss of AUMs due to some authorized project.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1473:**

*(Section 5.3.14.3.1.8, Page 5-684)*

*Line 1: The acronym “ROW” has already been defined in Chapter 5, so don’t do so again here.*

*Line 6: The BLM would want to “specify mitigation measures” for all resources to minimize/eliminate impacts, not just to “significantly affected” resources.*

*Line 7: Delete “to use ROWs”.*

**UDWRe Response:**

**The suggested edits from the first and third paragraph of the above comment have been incorporated.**

**Your comment is noted with respect to the second bullet of the comment.**

**BLM Comment 1474:**

*(Section 5.3.14.3.1.9, Page 5-684)*

*Lines 2 and 5: Replace “Proposed Action with “LPP alternatives” (two places).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1475:**

*(Section 5.3.14.3.1.10, Page 5-685)*

*Line 3: Delete “special use permit and”.*

*Line 4: Replace “Proposed Action with “LPP”.*

*Line 7: Replace “endemic upland species” with “an approved seed mix”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1476:**

*(Section 5.3.14.3.2, Pages 5-685 and 5-686)*

*Merge into Section 5.3.14.3.1 then delete this section.*

**UDWRe Response:**

**UDWRe's view is that the organization of the text is appropriate.**

**BLM Comment 1477:**

*(Section 5.3.14.3.4.1, Page 5-686)*

*These do not seem like logical or reasonable BMPs (or even BMPs at all). Remember that if residences are converted to desert landscaping, they would likely have a gravel cover, which would protect the underlying soils from wind erosion. Particulate concentrations would only exceed NAAQS if everyone in the city did this landscape conversion all the same time (which is highly unlikely). Any dust that would be added to the air would be temporary, and quickly dissipate.*

*These are not mitigations but rather consequences from implementing this alternative.*

**2nd paragraph** – *it is not reasonable to assume that “water monitors would have to patrol residential areas 24 hours per day to monitor outdoor water use and visually identify violators”. A “Gestapo-like” mechanism would NEVER be implemented, so don’t even imply that it would.*

**UDWRe Response:**

**Since the No Lake Powell Water alternative is an action alternative with components that may require additional planning and authorizations, the potential mitigation practices are necessarily based upon potential actions taken in response to the action alternative. In this case, if the landowner did not choose to install a gravel cover, which would be costly, then dust and particulate suppression may become an issue. As landscapes with this type of surface increase over time, the mitigation would become more important, even if the conversion didn’t occur simultaneously. It is possible, however, that with the incentives contemplated in this alternative, the conversion would take place fairly rapidly.**

**BLM Comment 1478:**

*(Section 5.3.14.3.4.1, Page 5-686)*

*“Mitigation measures for the No Lake Powell Water Alternative would include implementing dust and particulate suppression and controls on residential landscapes and common areas converted to desert landscapes. Prevailing winds from the southwest and other wind storm events would mobilize soil particles throughout residential areas, resulting in soil erosion, poor visibility, and particulate air pollution. Water would not be available for particulate suppression and control, and chemical stabilizers applied to soil may not be compatible with desert vegetation species, limiting the effectiveness of particulate suppression mitigation measures. Individual landowners would be responsible for managing their desert landscapes and particulate suppression, with management actions ranging from none to full.”*

*Numerous cities in the desert southwest have lower per capita water use than Washington County. Those cities continue to have “residential landscapes” though they are likely water-wise ones. Please explain how those cities experience the adverse effects noted here.*

**UDWRe Response:**

**The landscape available in different regions of the desert southwest may not have residential landscapes that could be maintained in Washington County. For example, the**

**Sonoran Desert landscapes of southern Arizona cities provide trees and other green landscape that couldn't be grown here. Furthermore, the timing of rainfall in southern Arizona allows for landscapes that the timing of rainfall in Washington County wouldn't support. This section is discussing measures to address certain potential impacts of removal of landscapes that are currently present in residential settings.**

**BLM Comment 1479:**

*(Section 5.3.14.3.4.1, Page 5-686)*

*“Residential properties and common areas within developments would require extensive monitoring during and following elimination of outdoor watering with culinary water leading to converting residential landscapes to desert landscapes. The water districts and/or communities would need to hire full-time residential water monitors to inspect, document, and enforce the restrictions on residential outdoor watering. The water monitors would have to patrol residential areas 24 hours per day to monitor outdoor water use and visually identify violators. Individual landowners would be required to install water meters at their connections with water distribution systems, and the meters would be regularly monitored and recorded to determine if residential water users are within or exceeding per capita water use target levels.*

*Residential water customers found to be exceeding per capita water use levels based on monitoring records would receive violation notices and would be successively fined for each violation until water service is turned off for non-compliance.” 24-hour water use patrols seem excessive. Please provide examples of other cities that employ 24-hour water use patrols? Can't water use be monitored remotely via digital technologies? This effects analysis seems needs to be supported by research and data.*

**UDWRe Response:**

**Refer to the response to BLM Comment 1477.**

**BLM Comment 1480:**

*(Section 5.3.14.3.4.3, Page 5-686)*

*Line 2: Replace “Proposed Action with “LPP alternatives”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1481:**

*(Section 5.3.14.4.1, Pages 5-687 and 5-688)*

**5.3.14.4.1 Proposed Action**

*Delete first 2 paragraphs and associated bullet list ... they are not relevant to the analysis on impacts to land use plans and conflicts.*

*3rd paragraph, line 1: Insert “when combined” after “direct cumulative effects on land use”.*

*3rd paragraph, line 5: Insert “when combined” before “Southern Corridor Highway effects”.*



**4th paragraph:** *This assessment is not accurate, or is misleading. Placing the proposed LPP in the designated utility corridor would not be a “benefit” on land use, but would instead be compatible with it. This part of the cumulative impacts analysis should be completely rewritten to talk about compatibility of the LPP with other uses (both present and projected future) in the corridor. Don’t focus on the ROW application process of a ROW applicant (which is what is presently included in this section). (Thus, delete the bullet list on page 5-688.)*

**UDWRe Response:**

**UDWRe’s view is that the text as written is appropriate with respect to the first two bullets of the comment.**

**The suggested edits from the second and third paragraphs of the above comment have been incorporated.**

**BLM Comment 1482:**

*(Section 5.3.14.5.1.1, Page 5-689)*

**Line 5:** *Need to explain what is meant by the statement about the LPP “permanently affect[ing] the public land management of 762 acres”. While the pipeline and associated facilities would be in place long-term, the ROW area would not involve exclusive use of the majority of the involved public land.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1483:**

*(Section 5.3.14.5.1.2, Page 5-689)*

**Line 6:** *Should be “suitable recreational segment”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1484:**

*(Section 5.3.14.5.1.3, Page 5-689)*

*This conclusion is inaccurate ... the majority of the public land involved in the LPP project would not be “converted” to other uses. There would be new roads, new power line and a buried pipeline, but much of the ROW area would revegetate and return to suitable rangeland. Please revise this section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1485:**

*(Section 5.3.14.5.2.1, Page 5-689)*

*Need to explain what is meant by the statement about the LPP “permanently affect[ing] the public land management of 754 acres”. While the pipeline and associated facilities would be in place long-term, the ROW area would not involve exclusive use of the majority of the involved public land.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1486:**

*(Section 5.3.14.5.1.2, Page 5-690)*

*Line 6: Should be “suitable recreational segment”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1487:**

*(Section 5.3.14.5.2.3, Page 5-690)*

*This conclusion is inaccurate ... the majority of the public land involved in the LPP project would not be “converted” to other uses. There would be new roads, new power line and a buried pipeline, but much of the ROW area would revegetate and return to suitable rangeland. Please revise this section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1488:**

*(Section 5.3.14.5.3.1, Page 5-690)*

*Need to explain what is meant by the statement about the LPP “permanently affect[ing] the public land management of 754 acres”. While the pipeline and associated facilities would be in place long-term, the ROW area would not involve exclusive use of the majority of the involved public land.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1489:**

*(Section 5.3.14.5.4, Page 5-690)*

*There is no transmission lines alternative – transmission lines are part of the other alternatives. This discussion on impacts should therefore be merged into the previous alternatives sections.*

**Land Ownership and Management:** *Need to explain what is meant by the statement about the LPP “permanently affect[ing] the public land management of 754 acres”. While the pipeline and associated facilities would be in place long-term, the ROW area would not involve exclusive use of the majority of the involved public land.*

**Grazing Land:** *What are the referenced 25 acres? Is this the total of ground permanently disturbed due to the actual power line structures? And need to explain why power lines would result in unavoidable adverse impacts.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**The text has been revised to address the topics identified in the last two paragraphs of the comment.**

**BLM Comment 1490:**

*(Section 5.3.14.5.5, Page 5-690)*

*This analysis is inaccurate. When considering effects to vegetation and soils from converting to desert landscapes, remember that native vegetation does not need artificial watering to survive and flourish. In addition, residences that are converted to desert landscaping would likely have a gravel cover, which would protect the underlying soils from wind erosion. Particulate concentrations would only exceed NAAQS if everyone in the city did this landscape conversion all the same time (which is highly unlikely). Any dust that would be added to the air would be temporary, and quickly dissipate.*

*The assertion that converting to desert landscapes “could result in uncontrolled particulate emissions causing chronic unavoidable adverse effects on soil erosion, visibility, and air quality during wind storm events” is ludicrous and unsupported.*

**UDWRe Response:**

**Your comment had been noted.**

**BLM Comment 1491:**

*(Section 5.3.14.5.5.1, Page 5-690)*

*“Land management actions on privately-owned residential properties and common areas in residential developments converted to desert landscapes could result in uncontrolled particulate emissions causing chronic unavoidable adverse effects on soil erosion, visibility, and air quality during wind storm events.”*

*Please provide data and research to support this.*

**UDWRe Response:**

**UDWRe’s view is that research is not needed nor does data need to be provided to make a statement that it can get dusty, soil can erode, and air quality can decrease during wind storms. The decreased surface area in residential landscapes resulting from conversion to**

**non-irrigated landscapes would allow dust particles, which are always being transported in the air, to become more mobile and more susceptible to re-suspension by wind action.**

**BLM Comment 1492:**

*(Section 5.3.14.5.5.1, Page 5-690)*

*“Eliminating residential outdoor watering with culinary water would be difficult to monitor, implement and enforce, resulting in unavoidable adverse effects on residential water users and municipalities. These effects could include higher rates to pay for enforcement activities, fines for violations of water use restrictions, and no water service for successive violations of water use restrictions.”*

*Please provide examples of how do other cities in the arid southwest deal with these issues.*

**UDWRe Response:**

**UDWRe’s view is that researching how other communities respond to water shortages is outside the scope of the FERC–approved study plan.**

**BLM Comment 1493:**

*(Section 5.3.15, Page 5-701)*

*This section does not address the impacts associated with the blasting that would occur through the Cockscomb along HWY 89.*

**UDWRe Response:**

**Impacts from blasting on transportation have been addressed in the traffic control plans. Impacts from blasting on other resources are addressed in other resource studies and plans.**

**BLM Comment 1494:**

*(Table 5-127, Page 5-702)*

- **2nd row under Proposed Action:** What is “FC” ... the road is probably “Forest Road 22, or the Ryan Road”.
- **4th row under Proposed Action:** Yellowstone Road – does this refer to the road that goes south to Yellowstone Mesa? If so, it is not a highway, so delete the reference to Hwy. 239.
- **8th row under Proposed Action:** Clayhole Road – add that this is County Road 5.

**UDWRe Response:**

**Revisions resulting from the review of the comments above were made as appropriate.**

**BLM Comment 1495:**

*(Section 5.3.15.1.2, Page 5-705)*

**2nd sentence:** *This is not true. Traffic is not typical of rural areas – it is well traveled much of the year due to its proximity to and connection for several national parks/recreation sites in the area*

*(including Grand Canyon North Rim, Zion National Park, Bryce Canyon National Park, and Pipe Spring National Monument).*

***Last sentence:** The acronym “ROW” has already been defined in Chapter 5, so don’t do so again here.*

**UDWRe Response:**

**2nd sentence – The text has been clarified to include some levels of increased use due to recreation.**  
**Last sentence – The text has been revised.**

**BLM Comment 1496:**

*(Table 5-128, Page 5-705)*

***Sources** – remove comma between author and date of each citation.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1497:**

*(Table 5-128, Page 5-705)*

*Update table with current information.*

**UDWRe Response:**

**The information is being reviewed with the attempt to update with current traffic data.**

**BLM Comment 1498:**

*(Section 5.3.15.1.2.1, Page 5-705)*

***1st line after Table 5-128:** This states that traffic data is not available for most local and county roads. While this is probably true, there IS some traffic counter data that the BLM could provide.*

**UDWRe Response:**

**The comment has been noted.**

**BLM Comment 1499:**

*(Section 5.3.15.1.2.2, Page 5-705)*

***Sub-section title:** Insert “Transportation” before “Rights-of- Way” (unless this is supposed to include information on all ROWs that intersect with LPP).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1500:**

(Section 5.3.15.1.2.3, Page 5-706)

**1st paragraph, 2nd line:** Remove comma between author and date of each citation.

**4th paragraph, 1st line:** Rewrite beginning of line to read “LOS D is the level of service typical of a busy ...”

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1501:**

(Section 5.3.15.1.3.1, Page 5-708)

**1st paragraph:** Please add a discussion of “main” BLM and county roads that would be affected by the LPP project.

**UDWRe Response:**

**The text has been revised as appropriate.**

**BLM Comment 1502:**

(Section 5.3.15.1.3.1, Page 5-708)

*“Vehicles added to local traffic from pipeline, penstock and facility construction would not exceed 28 vehicles per day as calculated from estimated construction activities. The calculations include six worker vehicles to and from site, 16 delivery and hauling vehicles, and six visitors to and from the site per day.”*

*The number of vehicles isn’t as important as how many trips those vehicles will make. Please include that information.*

**UDWRe Response:**

**The text has been revised as appropriate.**

**BLM Comment 1503:**

(Section 5.3.15.1.3.2, Page 5-708)

**1st sentence:** Not accurate as written. Please rewrite to read “Utility easements or ROWs would be required for transmission lines.”

*Note that the BLM DOES have the authority to issue ROWs for power transmission lines (authorized by Title V of FLPMA).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1504:**

(Section 5.3.15.1.3.4, Page 5-709)

*1st sentence and last sentence of “Access Roads”: None of this is included in the description of the alternatives (Ch. 3) ... please add because anything analyzed in Ch. 5 should be fully described in Ch. 3.*

**Access Road Construction or Improvement Estimates**

- **2nd bullet:** *The BLM would not necessarily authorize gravel roads. There may be areas (such as ACECs) where BLM cannot authorize this. Thus, delete “gravel” from this item.*
- **3rd bullet:** *Describe what is meant by “improved as necessary for access”.*

**UDWRe Response:**

**1st sentence and last sentence of “Access Roads” – This has been reviewed and will be inserted as appropriate.**  
**2nd bullet – The text has been revised.**  
**3rd bullet – The text has been revised to clarify.**

**BLM Comment 1505:**

*(Section 5.3.15.1.3., Page 4 5-709)*

*“Access roads to pump station and hydroelectric generating facilities, new maintenance roads and improved access roads would be constructed with gravel surfaces.” Aren’t paved access roads specified in other areas in the documents? Which is it?*

**UDWRe Response:**

**It is assumed that access roads would typically be graveled roadways; however, paved access roads are a possibility depending on conditions and requirements.**

**BLM Comment 1506:**

*(Section 5.3.15.1.3.4, Page 5-709)*

***Access Road Construction or Improvement Estimates** -the locations for these need to be specified and analyzed.*

**UDWRe Response:**

**The locations of access road construction have been analyzed, identified and included in the text.**

**BLM Comment 1507:**

*(Table 5-132, Page 5-710)*

- **10th line in column 1:** *Delete the reference to “ASR 239”.*
- **20th line in column 1:** *Should this be “(White Sage Wash)”? If so, please write it out.*

**Notes section, item #2:** *Delete last sentence (about graveling roads). The BLM would not necessarily authorize gravel roads. There may be areas (such as ACECs) where BLM cannot authorize this.*



**UDWRe Response:**

**The suggested edits have been incorporated and the text revised as appropriate.**

**BLM Comment 1508:**

*(Section 5.3.15.1.3.6, Page 5-711)*

**3rd bullet:** Chapter 3 states that discharge for maintenance would occur only one per year ... why then does this say that it would occur weekly?

**4th bullet:** Is it certain that power line maintenance visits would be weekly? This seriously affects the impacts analyses contained in the other sections of Chapter, where it is stated/implied that maintenance trips would be infrequent. It seems unlikely this would happen more than once or twice per year. Please resolve this inconsistency.

**UDWRe Response:**

**3rd bullet - The text has been revised for consistency.  
4th bullet – The text has been revised for consistency.**

**BLM Comment 1509:**

*(Section 5.3.15.1.3.6, Page 5-712)*

**1st paragraph after Table 5-134:** Is it certain that power line maintenance visits would be weekly? This seriously affects the impacts analyses contained in the other sections of Chapter, where it is stated/implied that maintenance trips would be infrequent. It seems unlikely this would happen more than once or twice per year. Please resolve this inconsistency.

**UDWRe Response:**

**The maintenance effort has been reviewed and estimates have been revised for consistency.**

**BLM Comment 1510:**

*(Section 5.3.15.2.1.1, Page 5-713)*

**This is a likely FATAL FLAW in this analysis.** The Recreation Resources section (5.3.13) states that roads could be blocked for up to 8 hours due to penstock construction (see in particular page 5-590). Yet here it is stated that the threshold for significance is 15 minutes. There is a big difference between 15 minutes and 8 hours! This inconsistency is a major flaw in the PLP analysis. Please rectify this.

**UDWRe Response:**

**The 8 hour blockage would only be for roads with extremely low AADT which does not include highways, roads to highly travelled recreation areas, etc. Roads that are not authorized to be closed up to 8 hours could be crossed utilizing boring methods.**

**BLM Comment 1511:**

*(Section 5.3.15.2.3, Page 5-714)*

*Delete this as a separate and distinct section ... this information should be incorporated into the analysis of impacts from each alternative. As part of that, please note the following:*

- **2nd bullet:** Delete completely – this is untrue. The significance criteria (when compared to what is on page 5-590 of the recreation section) would assess impacts to travel to/from the North Rim a “significant” impact.
- **3rd bullet:** Delete completely – this is also untrue. Traffic effects would not be minimal if visiting LPP facilities on a daily basis, as described on page 5-711. Adding that much traffic to areas that receive very little use currently would more than a minimal impact.
- **1st, 4th, 5th bullets:** Incorporate into the alternatives discussions.
- **Edits to 4th bullet:**
  - 1<sup>st</sup> line: Rewrite end of line to read “... penstock construction that would take place within state ROWs would occur”.
  - 9<sup>th</sup> line: According to the recreation section (5.3.13), closures could be up to 8 hours, not just 15 minutes.
- **Edits to 5th bullet:**
  - 3<sup>rd</sup> sentence: Please rewrite to read “Federal, county and local agencies would be contacted prior to construction prior to construction to obtain necessary approvals.”
- **6th bullet:** Move to list of BMPs (Section 5.3.15.3).

**UDWRe Response:**

**First comment – The comment has been reviewed and noted.**  
**2nd bullet – UDWRe disagrees, any recreationally significant road would likely not be authorized to be closed for 8 hours and more along the lines of the 15 min. significant criteria.**  
**3rd bullet – The text has been revised to clarify.**  
**4th bullet – The text has been revised. Closures of up to 8 hours would only be as authorized for very lightly traveled routes and not for highways or state routes.**  
**5th bullet – The text has been revised.**  
**6th bullet – The text has been relocated and revised.**

**BLM Comment 1512:**

*(Section 5.3.15.2.3, Page 5-714)*

*“Effects on non-automotive transportation (pedestrians, ATV users, hikers, and bicyclists) would be very temporary and unmeasurable and because of the type of project construction, relatively few conflicts would occur with these transportation modes and the minor inconveniences the construction would cause these users.” Wouldn’t the impacts to these users be analyzed in the Recreation section?*

**UDWRe Response:**

**These impacts are evaluated in the Recreation study as well as briefly addressed in the Transportation study.**

**BLM Comment 1513:**

*(Section 5.3.15.2.4, Pages 5-714 and 5-715)*

*Per the definition of “significance” in Section 5.3.15.2.1.1, and what the recreation resources section says would be the possible duration of road closures (up to 8 hours), impacts to transportation would be significant, not minor. Thus, the following edits should be made:*

- **1st sentence:** Should read “The Proposed Action construction would affect transportation infrastructure and service.”
- **4th sentence:** Beginning should read “Traffic delays could occur ...”
- **Lines 6-8:** Rewrite to read “Traffic on some local roads could be delayed during specific pipeline and penstock construction activities and traffic controls would be required. If delays would be longer than 15 minutes (which is likely), the Proposed Action would have significant effects on transportation infrastructure and service.
- Even with the above edits, there needs to be more analysis in this section. It is currently inadequate.

**UDWRe Response:**

**The significance threshold would not be reached for state, federal and other significant roadways as delays would be held to 15 minutes.  
The suggested edits from the first, second, and third bullets of the above comment have been incorporated.**

**BLM Comment 1514:**

*(Section 5.3.15.2.5, Page 5-715)*

*Rewrite to read “The Existing Highway Alternative construction would have effects on transportation infrastructure and service similar to that described in Section 5.3.15.2.4. The LOS would not change with LPP Project construction or operation. Traffic delays could occur during ... Traffic on some local roads could be delayed during specific pipeline and penstock construction activities and traffic controls would be required. If delays would be longer than 15 minutes (which is likely), the Existing Highway Alternative would have significant effects on transportation infrastructure and service.”*

*Even with this edit, there needs to be more analysis in this section. It is currently inadequate.*

**UDWRe Response:**

**The text has been edited; however, there is not expected to be significant impacts as delays over 15 minutes are not expected other than as authorized for very lightly used roads.  
The suggested edit from the first paragraph of the above comment has been incorporated.**

**BLM Comment 1515:**

*(Section 5.3.15.2.7, Page 5-715)*

*Rewrite to read “The Kane County Pipeline System would have effects on transportation infrastructure and service. The LOS would not change with LPP Project construction or operation. Traffic delays could occur during ... Traffic on some local roads could be delayed during specific pipeline and penstock construction activities and traffic controls would be required. If delays would be longer than 15 minutes (which is likely), the Kane County Pipeline System would have significant effects on transportation infrastructure and service.”*

*Even with this edit, there needs to be more analysis in this section. It is currently inadequate.*

**UDWRe Response:**

**The text has been edited; however, there is not expected to be significant impacts as delays over 15 minutes are not expected other than as authorized for very lightly used roads.**

**BLM Comment 1516:**

*(Section 5.3.15.2.8, Page 5-715)*

*Line 1: “Electrical Transmission Lines System” should not be capitalized.*

*Line 3: Delete “Minor”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1517:**

*(Section 5.3.15.2.10, Page 5-716)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be no cumulative effects to transportation infrastructure and service under the No Action Alternative.*

**UDWRe Response:**

**The No Action Alternative has been added to the text.**

**BLM Comment 1518:**

*(Section 5.3.15.4.1, Page 5-716)*

*Line 1: Delete “minimal”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1519:**

*(Section 5.3.15.4.5, Page 5-716)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be no cumulative effects to transportation infrastructure and service under the No Action Alternative.*

**UDWRe Response:**

**The No Action Alternative has been added to the text.**

**BLM Comment 1520:**

(Section 5.3.15.5.1, Pages 5-716 and 5-717)

*Rewrite 1st two sentences to read: “The Proposed Action would cause traffic delays of up to 8 hours on highways and roads during construction activities. These delays on traffic would be significant unavoidable adverse effects.”*

*This edit is to reflect what is in the recreation resources section (5.3.13).*

*Also need to explain why permanent access roads would have minor unavoidable adverse effects ON (not AS) transportation infrastructure.*

**UDWRe Response:**

**The text has been edited to address some of the comments; however, there is not expected to be significant impacts as delays over 15 minutes are not expected other than as authorized for very lightly used roads.**

**BLM Comment 1521:**

(Section 5.3.15.5.2, Page 5-717)

*Rewrite 1st two sentences to read: “The Existing Highway Alternative would cause traffic delays of up to 8 hours on highways and roads during construction activities. These delays on traffic would be significant unavoidable adverse effects.”*

*This edit is to reflect what is in the recreation resources section (5.3.13).*

*Also need to explain why permanent access roads would have minor unavoidable adverse effects ON (not AS) transportation infrastructure.*

**UDWRe Response:**

**The text has been edited; however, there is not expected to be significant impacts as delays over 15 minutes are not expected other than as authorized for very lightly used roads.**

**BLM Comment 1522:**

(Section 5.3.15.5.4, Page 5-717)

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to transportation infrastructure and service under the No Action Alternative.*

**UDWRe Response:**

**The No Action Alternative has been added to the text.**

**BLM Comment 1523:**

(Section 5.3.15.6, Pages 5-717 and 5-718)

*Most of the references listed here are not cited in the text. Please correct this.*

**UDWRe Response:**

**The references will be cited.**

**BLM Comment 1524:**

*(Section 5.3.16, Multiple Pages)*

**General Comment:** *The VRM section should be the first resource to be discussed in Vol 1. This section adds a lot of valuable information that would be useful for all other resources to refer to. Table 5-136 gives so much information. Please consider making this the first resource section that will ultimately add to the overall proposed action project site description.*

**UDWRe Response:**

**The document was organized and written in accordance with FERC guidance.**

**BLM Comment 1525:**

*(Section 5.3.16, Multiple Pages)*

**General Comment:** *Please add figures/maps in this section that show the locations of the VAUs and the KOPs. There does not appear to be a reference to them. There may be maps in the appendix, but if there are, they are not referenced in the text.*

**UDWRe Response:**

**Graphics identifying VAUS and KOPs in relation to project components have been added to the text.**

**BLM Comment 1526:**

*(Section 5.3.16.1.1.1, Page 5-719)*

**1st paragraph**

- **Line 1:** Change to “southwestern Utah and northwestern Arizona”.
- **Line 2:** 7,400 feet? Please verify if there is anywhere in the current project area that goes that high in elevation.
- **Line 4:** Why is “highway” in all caps?

**2nd paragraph**

- **Lines 6, 7:** Correct the spelling of “Mojave”.

**3rd paragraph**

- **Line 1:** Delete “the” before “Glen Canyon”.
- **Line 15:** Change to “area near the GSENM west boundary along Highway 89, where the alignments of the alternatives would split again. The”.
- **Lines 16-19:** Change to “The Existing Highway Alternative would run parallel to Highway 389; the Proposed Action alignment would turn south then west around the southern edge of the Kaibab-Paiute Indian Reservation. The Southeast Corner Alternative alignment would cross through the southeastern corner of the Reservation. The various alternative alignments would converge west of the reservation and”.

- *Line 21: Insert “the” before “Hurricane Fault”.*

**UDWRe Response:**

**The suggested edits or comments have been addressed and incorporated.**

**BLM Comment 1527:**

*(Section 5.3.16.1.1.1, Page 5-720)*

**General comments** *(multiple places in this section):*

- *Why is “highway” in all caps?*
- *Delete “the” before “Glen Canyon”.*

**Specific comments**

- *Lines 15, 16: Need to define what qualifies as “moderate height”.*
- *Line 23: Remove “the” before “Canaan Gap”.*
- *Line 25: Correct the spelling of “Mojave”.*

**UDWRe Response:**

**The suggested edits or comments have been addressed and incorporated.**

**BLM Comment 1528:**

*(Section 5.3.16.1.1.2, Page 5-720)*

*“Catstair Canyon Trailhead is visible at the base of the Cockscomb, near MP 24.4.” Please delete this reference. This is not a designated, developed trailhead.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1529:**

*(Section 5.3.16.1.1.2, Page 5-720 and 5-721)*

**General comments** *(multiple places in this section):*

- *Why is “highway” in all caps?*
- *Delete “the” before “Glen Canyon”.*

**Specific comments**

- *6th paragraph, line 4: Isn’t Pine Valley Mountain WEST of the project alignment? Delete “the” before “Glen Canyon”.*
- *6th paragraph, last line: Delete Zion ... it is not “adjacent” to the project.*

**UDWRe Response:**

**The suggested edits from the second and third bullets of the above comment have been incorporated.**

**BLM Comment 1530:**

*(Figure 193, Page 5-730)*



*WSAs and Wild Segments of WSRs should be shown as VRM Class I.*

**UDWRe Response:**

**VRM Classes as provided by BLM are reflected on revised Graphics in the text.**

**BLM Comment 1531:**

*(Table 5-137, Page 5-731)*

*Totals in table need to be adjusted to reflect WSAs and Wild Segments of WSRs are VRM Class I.*

**UDWRe Response:**

**Project components do not cross VRM Class I. A note has been added to the table to reflect this.**

**BLM Comment 1532:**

*(Section 5.3.16.1.3.1, Page 5-731)*

*Last sentence on page: Change to “Table 5-138 summarizes the current management goals of each BLM field office.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1533:**

*(Section 5.3.16.1.3.1 & Table 5-138, Page 5-732)*

*“Grand Staircase National Monument Field Office” Edit to read Grand Staircase-Escalante National Monument. There are several additional goals and decisions within the GSENM MP that address management of visual resources that should be noted here.*

*The Monument will be managed according to two basic principles. First and foremost,*

- The Monument will remain protected in its primitive, frontier state*
- The Monument will provide opportunities for the study of scientific and historic resources.*

*MMP page iv.*

**UDWRe Response:**

**Additional goals from GSENM MP have been included in the text. The suggested edit from the first sentence of the first paragraph of the above comment has been incorporated.**

**BLM Comment 1534:**

*(Section 5.3.16.1.4.1, Page 5-733)*

*Excellent, up-to-date discussions on Fredonia-Vermilion Cliffs Scenic Road and the historic trails.*

**UDWRe Response:**

**No response is required.**

**BLM Comment 1535:**

*(Section 5.3.16.1.4.1, Page 5-733)*

*End of 6th line: Seems like it should be “Kaibab Plateau” (rather than “Kanab Plateau” ... please verify this.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1536:**

*(Section 5.3.16.1.5.2, Page 5-734)*

*Why is “highway” in all caps?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1537:**

*(Section 5.3.16.1.5.3, Page 5-734)*

*Why is “highway” in all caps?*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1538:**

*(Section 5.3.16.1.6.2, Page 5-735)*

*The visual section of this document included the Paria-Hackberry WSA. Other areas of the document do not. Address lack of consistency.*

**UDWRe Response:**

**Project components occur within the middle-ground of the Paria Hackberry WSA. This is why it has been included as part of the visual analysis.**

**BLM Comment 1539:**

*(Section 5.3.16.1.6.1, Page 5-735)*

*Add the following to the end of the 2nd paragraph:*

*“The Kanab Creek ACEC was designated for the protection of the endangered southwestern willow flycatcher habitat, riparian and scenic values, and cultural resources.”*

**UDWRe Response:**

**Kanab Creek ACEC has been identified as having scenic values which are a contributing factor in designation. Additional resources have not been included as part of this Visual Resource section.**

**BLM Comment 1540:**

*(Section 5.3.16, Page 5-735)*

*Canaan Mountain is not a WSA, it is designated wilderness.*

**UDWRe Response:**

**GIS data that has been provided shows that Canaan WSA was reduced in size. The western portion became a designated wilderness area while the eastern portion remains as WSA.**

**BLM Comment 1541:**

*(Section 5.3.16.2.1, Page 5-736)*

*4th bullet: Change to “Non-conformance with VRM objectives that would require an amendment to the relevant federal resource management plan to change the VRM class.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1542:**

*(Section 5.3.16, Multiple Pages)*

*The Recreation section needs to refer to the Visual section for up-to-date information on the historic trails and scenic roads.*

**UDWRe Response:**

**The recreation resources section of the text will be revised to address the comment.**

**BLM Comment 1543:**

*(Section 5.3.16.2.3.1, Page 5-742)*

*2nd paragraph, line 3: Explain what KOPs are (the average reader may not know what they are).*

**UDWRe Response:**

**A definition has been provided. “KOPs are locations along a travel route or at a use area or a potential use area, where project components would be viewed by the casual observer.”**

**BLM Comment 1544:**

*(Section 5.3.16.2.3.2, Page 5-744)*

*Last sentence in 1st paragraph: To provide context, need to define the vegetation heights for each of the categories (low, medium high).*

**UDWRe Response:**

**Vegetation heights for the categories have been included (L = 0-5', M 5-20', H>20').**

**BLM Comment 1545:**

*(Section 5.3.16.2.3.2, Page 5-745)*

*1st paragraph: Correct the spacing of the last two lines of this paragraph.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1546:**

*(Section 5.3.16.2.3.3, Page 5-746)*

*1st line on page references staging areas. However, none are described (as to location) in Chapter 3 of this PLP.*

**UDWRe Response:**

**Staging areas are now addressed as part of the VAU impacts table.**

**BLM Comment 1547:**

*(Section 5.3.16.2.3.4, Page 5-746)*

*1st paragraph: Correct the spacing of the last line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1548:**

*(Section 5.3.16.2.3.5, Page 5-747)*

*1st paragraph: Correct the spacing of the 3rd line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1549:**

*(Section 5.3.16.2.3.6, Page 5-748)*

*2nd paragraph, line 1: Insert “(Kanab, Utah)” after “supply one community”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1550:**

*(Section 5.3.16.2.3.6, Page 5-748)*

*3rd paragraph: This text is more appropriate for cumulative impacts discussion, rather than indirect effect. Please move it to that section.*

**UDWRe Response:**

**The text has been determined to be appropriate for this section.**

**BLM Comment 1551:**

*(Section 5.3.16.2.3.6, Page 5-750 and 5-751)*

*2nd paragraph under “Effects on ACECs ... : 1st line: “Little Creek” is two words, not one.*

*3rd paragraph under “Effects on ACECs ... : Please correct the spelling of “Vermilion” (one “L”, not two).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1552:**

*(Section 5.3.16.2.3.6, Page 5-751)*

*The correct terminology for whether or not actions meet the direction set forth in a federal resource management plan is “CONFORMANCE” (not “compliance”). Thus, please make the following changes/edits:*

- Section heading should be “Conformance with Management Objectives”.*
- 5th line under “BLM VRM System Classes – should be “conformance with the established objectives.”*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1553:**

*(Section 5.3.16.2.3.6, Pages 5-751 to 5-752)*

## ***“Compliance with Management Objectives BLM Visual Resources Management (VRM) System Classes***

*The BLM has developed measurable standards for managing the visual resources of BLM lands. Management classes with established objectives have been identified for visual resources in the area of potential effect as part of the RMPs process. The analysis described below determined whether or not the Proposed Action and its associated aboveground facilities would be in compliance with the established objectives. The BLM’s Visual Resource Contrast System (BLM Handbook 8431-1) was used to evaluate the visual contrast between the Proposed Action and the existing landscape. The contrast rating evaluations were conducted from KOPs within the area of potential effect. Of the 41 KOPs identified for this assessment, 40 are located within the Proposed Action.*

*Table 5-142 provides the location of each KOP.*

*VRM class objectives would not be met in several VAUs, depending on the distance zones from which they would be viewed. The project would not meet VRM Class II in the foreground distance zone of 6 VAUs, including Unit 5, Unit 6, Unit 7, Unit 8, Unit 12, and Unit 20. The associated project configurations within the VAUs noted above would include the following facilities:*

- ☐ *High Point Regulating Tank-2*
- ☐ *Hydro Station HS-1*
- ☐ *Hurricane Cliffs Afterbay Reservoir*
- ☐ *Hurricane Cliffs Hydro Station*
- ☐ *Hurricane Cliffs Hydro Afterbay*

*The Proposed Action would not meet VRM Class II in the middleground distance zone of VAU 20 with the proposed configuration. The associated project configurations within this VAU would include the following facilities:*

- ☐ *Hurricane Cliffs Hydro Station*
- ☐ *Hurricane Cliffs Afterbay Reservoir*

*VRM Class III would not be met within the foreground distance zone in 3 VAUs, including Unit 4, Unit 7, and Unit 8. The associated project configurations within the VAUs noted above would include the following facilities:*

- ☐ *BPS-3 (Alt.)*
- ☐ *High Point Regulating Tank-2*
- ☐ *Hydro Station HS-1*

*Table 5-143 indicates the various management classes by BLM district and by VAU, as well as the determination of whether the Proposed Action would be in compliance with the associated VRM class objectives. The determination of compliance was based on the results of the contrast rating evaluations at the KOPs. If there were no KOPs identified, the magnitude of change in the landscape character was based on the magnitude of change to the regional landscape character. Based on this evaluation, the Proposed Action would create changes to the landscape ranging from very low to high. The changes in many areas would be perceived by the casual observer, particularly at facility locations, because of the moderate to high level of contrast in visual elements of form, line, color and texture.*

*The majority of the Proposed Action would comply with VRM objectives for Classes III and IV with implementation of the protection and mitigation measures. The exception would be BPS-3 (Alt.) and HS-1—both of which would require extraordinary mitigation measures not defined in this document in order to meet the associated VRM Class III designations in these areas. For areas with a Class II designation, additional protection and mitigation measures would be required in some locations to further reduce potential effects. In addition, HS-1 would require extraordinary mitigation measures not defined in this document in order to meet the associated VRM Class II designations in these areas. If standard, additional, and extraordinary mitigation measures were implemented, along with site-specific mitigation measures that would be determined in the project Plan of Development, the changes associated with the project would be subordinate, i.e., repeat the basic elements found in the natural and cultural landscape characteristics.*

*This extensive amount of text explains what VAUs could meet which VRM Class objectives but it does not succinctly explain which project alignments segments or facilities do not meet VRM objectives that are assigned to specific areas on BLM lands. Table 5-143 is very difficult to decipher. This information is critically important because it determines where plan amendments are necessary for this project to move forward. From this section and referencing the contrast ratings in the study plan these are the locations that would not meet VRM objectives, and require a plan amendment:*

- *BPS-3 (Alt.) (would not meet VRM III) (KFO)*
- *Pipeline segment near Toadstools TH (would not meet VRM II) (GSENM)*
- *Hydro Station HS-1 (would not meet VRM III) (GSENM)*

*This needs to be confirmed with Visuals contractor.*

**UDWRe Response:**

**The BLM VRM conformance table has been revised to address conformance by KOP.**

**BLM Comment 1554:**

*(Section 5.3.16.2.3.6, Page 5-752)*

*1st paragraph after 2nd bullet list, lines 2, 3: Replace “compliance” with “conformance”.*

*2nd paragraph after 2nd bullet list, line 1: Change “would comply with” to “would meet”.*

*2nd paragraph after 2nd bullet list, line 2: Protection and mitigation measures such as what?*

**UDWRe Response:**

**Mitigation measures have been revised in section 5.3.16.3.1.1.  
The suggested edits have been incorporated.**

**BLM Comment 1555:**

*(Table 5-142, Page 5-753)*

*KOP #20: “Highway” should not be in all caps.*

**UDWRe Response:**



**The suggested edit has been incorporated.**

**BLM Comment 1556:**

*(Section Table 5-143, Pages 5-755 and 5-756)*

*The correct terminology for whether or not actions meet the direction set forth in a federal resource management plan is “CONFORMANCE” (not “compliance”). Thus, please make the following changes/edits:*

- *Column headings – replace “Compliance” with “Conformance”.*
- *Notes – replace “compliance” with “conformance”.*

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment of the above comment has been incorporated.**

**BLM Comment 1557:**

*(Section 5.3.16.2.3.6, Page 5-756)*

*1st paragraph after Table 5-143: Correct the spacing of the 3rd line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1558:**

*(Section 5.3.16.2.3.6, Page 5-757)*

**Fredonia-Vermilion Cliffs Scenic Road:**

- *2nd line: Should be “effect on the vividness” (not “affect”).*

**UDWRe Response:**

**The text has been changed to “impact”.**

**BLM Comment 1559:**

*(Section 5.3.16.2.3.6, Page 5-757)*

**ACECs, Wilderness .... :**

- *1st paragraph, 1st sentence: This sentence is unclear. VRM objectives still need to be met (Class II for ACECs). Please rewrite to clarify.*
- *1st paragraph, line 2: replace “compliance” with “conformance”.*
- *1st paragraph, line 3: Replace “will” with “would”.*

**UDWRe Response:**

**1<sup>st</sup> paragraph, 1<sup>st</sup> sentence – The text has been edited for clarity.  
The suggested edits in lines 2 and 3 have been incorporated.**

**BLM Comment 1560:**

*(Section 5.3.16.2.4, Page 5-757)*

*Correct the spacing of the 3rd line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1561:**

*(Section 5.3.16.2.4.1, Page 5-760)*

*1st paragraph on page: Correct the spacing of the 3rd line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1562:**

*(Section 5.3.16.2.4.2, Page 5-760)*

*1st paragraph: Correct the spacing of the 4th line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1563:**

*(Section 5.3.16.2.4.3, Page 5-761)*

*Correct the spacing of the 4th line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1564:**

*(Section 5.3.16.2.4.4, Page 5-761)*

*Correct the spacing of the 5th line of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1565:**

*(Section 5.3.16.2.4.6, Page 5-762)*

*1st paragraph: Correct the spacing of the 4th line of this paragraph.*

*Effect on Historic Trails section: Correct the spacing of the 3rd line of this paragraph.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1566:**

*(Section 5.3.16.2.4.6, Page 5-763)*

*Change “Compliance with Management Objectives” with “Conformance with Management Objectives”. The correct terminology for whether or not actions meet the direction set forth in a federal resource management plan is “CONFORMANCE” (not “compliance”).*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1567:**

*(Section 5.3.16.2.4.6, Page 5-763)*

***BLM VRM System Classes section***

***1st paragraph: Correct the spacing of the 3rd line of this paragraph.***

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1568:**

*(Section 5.3.16.2.4.6, Page 5-764)*

*What is this “Table 5-148” block at the top of the page?*

**1st line of text on page:**

• Add “Table 5-XXX” to the beginning of the text (is that the correct table to reference?). This is a “hanging” sentence.

**1st paragraph on page:**

• **2nd line of paragraph:** Replace “would be in compliance with” with “would meet”.

• Several places in both paragraphs – change “compliance” to “conformance”.

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1569:**

*(Table 5-148, Page 5-765)*

*The correct terminology for whether or not actions meet the direction set forth in a federal resource management plan is “CONFORMANCE” (not “compliance”). Thus, please make the following changes/edits:*

• Column headings – replace “Compliance” with “Conformance”.

- *Notes – replace “compliance” with “conformance”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1570:**

*(Section 5.3.16.2.4.6, Page 5-765)*

*1st line after Table 5-148: Replace “would comply with” with “would meet”.*

*1st paragraph after Table 5-148: “Protection and mitigation measures” are referred to twice – what measures does this refer to (should summarize them here, to provide context for this effects determination).*

*National Park Service section – replace “compliance” with “conformance”.*

**UDWRe Response:**

**The suggested edits from the first and third paragraphs of the above comment have been incorporated.  
Mitigation measures have been referenced in the text.**

**BLM Comment 1571:**

*(Section 5.3.16.2.4.6, Page 5-766)*

*Scenic Roads and Byways section – replace “compliance” with “conformance”.*

*Historic Trails section – replace “compliance” with “conformance”.*

*ACECs, Wilderness Areas, and WSAs section – replace “compliance” with “conformance”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1572:**

*(Section 5.3.16.2.5, Page 5-766)*

*2nd line: replace “compliance” with “conformance”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1573:**

*(Section 5.3.16.2.4.1, Page 5-766)*

*Sub-section numbering is incorrect: It should be 5.3.16.2.5.1*

*1st paragraph: Correct the spacing of the last line of this paragraph.*

*2nd paragraph: Correct the spacing of this paragraph.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1574:**

*(Section 5.3.16.2.4.1, Page 5-767)*

*Top of page: Correct the spacing of this paragraph.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1575:**

*(Section 5.3.16.2.4.2, Page 5-767)*

*Sub-section numbering is incorrect: It should be 5.3.16.2.5.2*

*Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.  
The text has been edited for clarity.**

**BLM Comment 1576:**

*(Section 5.3.16.2.4.3, Page 5-767)*

*Sub-section numbering is incorrect: It should be 5.3.16.2.5.3*

*Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.  
The text has been edited for clarity.**

**BLM Comment 1577:**

*(Section 5.3.16.2.4.4, Page 5-767)*

*Sub-section numbering is incorrect: It should be 5.3.16.2.5.4*

*Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.  
The text has been edited for clarity.**

**BLM Comment 1578:**

*(Section 5.3.16.2.4.4, Page 5-767)*

***Sub-section numbering is incorrect: It should be 5.3.16.2.5.5***

*Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated.  
The text has been edited for clarity.**

**BLM Comment 1579:**

*(Section 5.3.16.2.4.4, Page 5-767)*

***Sub-section numbering is incorrect: It should be 5.3.16.2.5.6***

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1580:**

*(Section 5.3.16.2.4.5, Page 5-768)*

*What is this “Table 5-148” block at the top of the page?*

***1st line of text on page:***

• *Add “Table 5-XXX” to the beginning of the text (is that the correct table to reference?). This is a “hanging” sentence.*

***1st paragraph on page:***

- ***2nd line of paragraph:*** *Replace “would be in compliance with” with “would meet”.*
- ***Lines 3, 4 (and line 1 of following paragraph):*** *Change “compliance” to “conformance”.*

***3rd paragraph on page:***

- ***Line 1:*** *Replace “would comply with” with “would meet”.*
- ***“Protection and mitigation measures”*** *are referred to - what measures does this refer to (should summarize them here, to provide context for this effects determination).*

***National Park Service section***

- *Change “compliance” to “conformance”.*
- *Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?*

***Scenic Roads and Byways section***

- Change “compliance” to “conformance”.
- Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?

***Historic Trails section***

- Change “compliance” to “conformance”.
- Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1581:**

*(Section 5.3.16.2.4.5, Page 5-769)*

***ACECs, Wilderness Areas and WSAs section***

- Change “compliance” to “conformance”.
- Effects analysis says that effects would be “similar” ... this means the effects are not identical. So what are the differences?

**UDWRe Response:**

**The suggested edit from the first bullet of the above comment has been incorporated. The text has been edited for clarity.**

**BLM Comment 1582:**

*(Section 5.3.16.2.6, Page 5-769)*

*There are no distinct “transmission line alternatives” ... construction and operation of transmission lines is built into each of the separate alternatives in Chapter 3. Thus, merge this section (and sub-sections 5.3.16.2.6.1 and 5.3.16.2.6.2) into the other sub-sections on impacts by alternative.*

*The following edit would also then be necessary: Line 2 under “Low Magnitude of Change” (sub-section 5.3.16.2.6.1) – change “This alternative would be” with “This transmission line would be”.*

**UDWRe Response:**

**Transmission lines have been incorporated into the analysis. The suggested edit from the second paragraph of the above comment has been incorporated.**

**BLM Comment 1583:**

*(Section 5.3.16.2.6.2, Page 5-769)*

***Line 4:*** Change “The alternatives are” to “These transmission lines are”.

**UDWRe Response:**



**The suggested edit has been incorporated.**

**BLM Comment 1584:**

*(Section 5.3.16.2.6., Page 5-769)*

**Sub-section numbering:** *With current organization, this sub-section should be 5.3.16.2.7; however, if the transmission lines discussion is merged with the alternatives analyses, then it would remain 5.3.16.2.6.*

*This effects analysis is inaccurate. If landscape watering were to stop, and artificial/unnatural landscaping were to be converted to natural/xeric landscaping, then this xeric landscaping would BETTER blend with the surrounding desert environment and any contrasts with the surrounding landscape would then greatly diminish. Thus, effects would be “beneficial” (which would be “major,” but major in a positive way).*

**Line 3:** *Change to “... culinary water would result in”.*

**Lines 4-6:** *Delete “with long-term direct effects on ... metropolitan cities and communities”. As stated above, converting to xeric landscapes would BETTER blend with the surrounding natural landscapes.*

**Last part of section:** *Please note that the same level of detail/analysis needs to be included for this alternative as for all of the pipeline alternatives. Please add that.*

**UDWRe Response:**

**The suggested edits from the third and fourth paragraphs of the above comment have been incorporated.**

**Additional visual analysis has been provided for the transmission line components of the project alternatives.**

**BLM Comment 1585:**

*(Section 5.3.16.2.6, Page 5-772)*

*The Visual Study Report (pg 4.62) prepared by the visual resource contractors says this regarding the No Lake Powell Water Alternative: “Under the No Lake Powell Water Alternative, there would be no impacts on the existing visual character from construction and maintenance of the pipeline and its associated facilities. New water treatment facilities not associated with the pipeline would be required to meet water supply needs and there could be a change in the visual setting in the vicinity of where those facilities would be constructed.”*

*Chapter 5 of the Preliminary Report says: “The No Lake Powell Water Alternative would have major, long-term effects on visual resources in the St. George metropolitan area. Eliminating outdoor watering of traditional landscapes with culinary water would require transitioning to desert landscapes (except in areas served by secondary water supply), with long term direct effects on line, form, color, and texture in the foreground and middleground viewed by residents of and visitors to St. George metropolitan cities and communities. Construction of the reverse osmosis water treatment facility, pump stations, Warner Valley Reservoir embankment dam and reservoir surface, brine evaporation ponds, and electrical transmission lines near the Washington Fields Diversion would have major changes on visual elements of line, form, color*

*and texture in the foreground viewed from the Southern Corridor Highway (both directions) and middleground viewed from various points in the Virgin River Valley.”*

*Please explain this discrepancy.*

*How would transitioning from the traditional high-water-use landscapes to low-water use landscapes have long term effects on line, form, color and textures of the characteristic landscape?*

**UDWRe Response:**

**The “discrepancy” arises from the fact that the two statements are discussing two different subjects. Namely visual effects from the construction of the Lake Powell Pipeline Project and visual effects from the change in landscaping and construction of facilities necessary to replace the facilities associated with the No Lake Powell Water Alternative.**

**BLM Comment 1586:**

*(Section 5.3.16.2.6, Page 5-772)*

**3rd paragraph:** *“The No Lake Powell Water Alternative would have major, long-term effects on visual resources in the St. George metropolitan area. Eliminating outdoor watering of traditional landscapes with culinary water would require transitioning to desert landscapes (except in areas served by secondary water supply), with longterm direct effects on line, form, color, and texture in the foreground and middleground viewed by residents of and visitors to St. George metropolitan cities and communities. Construction of the reverse osmosis water treatment facility, pump stations, Warner Valley Reservoir embankment dam and reservoir surface, brine evaporation ponds, and electrical transmission lines near the Washington Fields Diversion would have major changes on visual elements of line, form, color and texture in the foreground viewed from the Southern Corridor Highway (both directions) and middleground viewed from various points in the Virgin River Valley.”*

*BLM, NPS etc are not analyzing this document for “traditional outdoor watering of St. George lawns. This needs to be rewritten with regards to the No LPP water alternative and how it will not accomplish the Purpose and Need.*

**UDWRe Response:**

**Referencing existing conditions has been established as the baseline for analytical purposes. Eliminating outdoor watering would alter the visual landscape and the FERC-approved study plan mandates that analysis be conducted in reference to baseline (existing) conditions.**

**BLM Comment 1587:**

*(Section 5.3.16.2.7, Page 5-772)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to visuals under the No Action Alternative.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1588:**

*(Section 5.3.16.3, Page 5-772)*

*Protection, Mitigation and Enhancement Measures – Including many of these as Design Features instead of mitigations would reduce the visual impacts of the alternatives.*

**UDWRe Response:**

**Your comment has been noted.**

**BLM Comment 1589:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*10th bullet: ??? Please remove tree thinning as part of the LPP project.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1590:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Coordinate with the BLM to make sure that construction, operation and maintenance of the pipeline, penstock and associated aboveground facilities in Class II areas would be consistent with the objectives and guidelines of Class II areas.” Edit to include being consistent with VRM Class III objectives also.*

*How is this measure being implemented when several proposed facilities do not meet VRM objectives?*

**UDWRe Response:**

**The text has been revised to address the comment. Modifications to RMPs or the MMP would be necessary, as applicable.**

**BLM Comment 1591:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Use seed mixes that include species...” Use native seed mixes on GSENM.*

**UDWRe Response:**

**The mitigation measures have been revised in the text.**

**BLM Comment 1592:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Monitor the success of revegetation for an initial three years, with an additional two years determined after evaluation of the initial three-year monitoring period.” How was this timeframe determined? What actions would be specified based on results of monitoring?*

**UDWRe Response:**

**The timeframe was determined with regards to what UDWRe considered to be appropriate. One action that could result from monitoring would be additional revegetation activities.**

**BLM Comment 1593:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Blend aboveground facilities with the existing landscape colors as closely as possible and select colors in coordination with the BLM, NPS and Reclamation.” Edit to: Materials and surface treatments of facilities should repeat and/or blend with the existing form, line, color, and texture of the landscape.*

**UDWRe Response:**

**The mitigation measures have been revised in the text.**

**BLM Comment 1594:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Redistribute slash across the right-of-way following final cleanup and seeding in areas.” Replace with this: Slash from vegetation removal should be mulched and spread to cover fresh soil disturbances (preferred) or should be buried. Slash piles should not be left in sensitive viewing areas.*

**UDWRe Response:**

**The mitigation measures have been revised in the text.**

**BLM Comment 1595:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Control nighttime lighting at aboveground facility sites by using shielded and downcasting fixtures and motion detection switches.” Edit to: “....using full-shielded, full-cutoff, and downcasting fixtures... And add to this one: Lighting for facilities should not exceed the minimum required for safety and security.*

**UDWRe Response:**

**The mitigation measures have been revised in the text.**

**BLM Comment 1596:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Minimize facility site sizes and fenced areas to minimize footprints of sites.” How is this being accomplished in the alternatives?*

**UDWRe Response:**

**This BMP would be undertaken during the design phase of the project.**

**BLM Comment 1597:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Mitigate to meet scenery objectives of specially designated lands that the Proposed Action crosses.” Isn’t this one covered in the first measure?*

**UDWRe Response:**

**The mitigation measures have been revised in the text.**

**BLM Comment 1598:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Add supplemental fill material to the rock riprap on the outside faces of the forebay and afterbay embankment structures to allow for revegetation.” ...allow for revegetation and contouring.*

**UDWRe Response:**

**The mitigation measures have been revised in the text.**

**BLM Comment 1599:**

*(Section 5.3.16.3.1.1, Page 5-773)*

*“Install rock riprap material on dam structures to be similar to surrounding landforms.” Study report says: “Grade plating material on dam structures to be similar to surrounding landforms.” (pg 5-2) Why the discrepancy?*

**UDWRe Response:**

**UDWRe’s view is that there is not a discrepancy in the statements. Plating could include riprap as well as other materials.**

**BLM Comment 1600:**

*(Section 5.3.16.3.1.3, Page 5-774)*

*“Transmission line contractors would be required to use towers and poles with nonreflective gray or natural rust surface.” Are any poles wooden?*

**UDWRe Response:**

**Materials for transmission line construction have not yet been determined.**

**BLM Comment 1601:**

*(Section 5.3.16.3.1.2, Page 5-774)*

*Merge into the previous section ... no reason to have a separate section for these mitigation measures.*

**UDWRe Response:**

**The mitigation measures have been merged in the text.**

**BLM Comment 1602:**

*(Section 5.3.16.3.1.3, Page 5-774)*

*Merge into the previous section ... no reason to have a separate section for these mitigation measures.*

**UDWRe Response:**

**The mitigation measures have been merged in the text.**

**BLM Comment 1603:**

*(Section 5.3.16.3.5, Page 5-775)*

***NEW SUB-SECTION:** There needs to be a sub-section addressing the No Action Alternative (which is currently missing) – please add. Note that it would simply state that since no activities would occur, there are no mitigation measures proposed.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1604:**

*(Section 5.3.16.4.1, Page 5-775)*

*Delete bullet list and paragraph following it ... they are not relevant to the analysis on impacts to visual resources.*

***2nd paragraph following now-deleted bullet list:** This analysis under-states the visual impacts from the LPP project. Impacts would at least be cumulatively moderate, and WOULD result in noticeable changes in the overall landscape. It appears that the overall cumulative effects would be major.*

**UDWRe Response:**

**The suggested edit from the first paragraph has been incorporated.  
The cumulative impacts have been revised in the text.**

**BLM Comment 1605:**

*(Section 5.3.16.4.4, Page 5-776)*

*There is no distinct “transmission line alternative” ... construction and operation of transmission lines is built into each of the separate alternatives. Thus, merge this section into the other sub-sections on impacts by alternative.*

**UDWRe Response:**

**Transmission lines have been included as part of the analysis.**

**BLM Comment 1606:**

*(Section 5.3.16.4.5, Page 5-776)*

*Need more analysis on why there would be cumulative impacts ... the current text provides no real rationale for this conclusion.*

**UDWRe Response:**

**UDWRe’s view is that there would be permanent visual effects due to the construction of the facilities constructed as part of the No Lake Powell Water Alternative and that these effects would combine with the permanent visual effects of the Southern Corridor Highway and those effects would be cumulative.**

**BLM Comment 1607:**

*(Section 5.3.16.4.5, Page 5-776)*

*“The No Lake Powell Water Alternative visual resource cumulative effects would occur when combined with the effects of the Southern Corridor Highway construction and operation near the Washington Fields Diversion. The visual resource effects of constructing and operating the reverse osmosis water treatment facility, pump stations, Warner Valley Reservoir embankment dam and reservoir, brine evaporation ponds, and electrical transmission lines would result in long-term cumulative effects when combined with the visual effects of the Southern Corridor Highway construction and operation.”*

*What is this about? The write ups for the No LPP water alternatives do not make sense and should be rewritten by the specialist with the purpose and need in mind. The contractors working on this document should have caught and fixed this before sending out to the agencies. How many of these exist in this document?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1608:**

*(Section 5.3.16.4.6, Page 5-776)*

**NEW SUB-SECTION:** *There needs to be a sub-section addressing the No Action Alternative (which is currently missing) – please add. Note that it would simply state that there would be no cumulative impacts to visual resources.*

**UDWRe Response:**



**The text has been revised to address the comment.**

**BLM Comment 1609:**

*(Section 5.3.16.5.2, Page 5-776)*

*It is inaccurate to state that the unavoidable adverse effects from the Existing Highway Alternative would be the same as those for the Proposed Action. Total effects would be less because the pipeline alignment (on the AZ Strip) would follow an existing paved highway, where disturbance has already occurred, versus going down and around the Indian Reservation (which is essentially “virgin” country in the way of visual impacts such as would be created from the LPP project). Please revise this analysis accordingly.*

**UDWRe Response:**

**The analysis statement has been revised.**

**BLM Comment 1610:**

*(Section 5.3.16.5.6, Page 5-777)*

**NEW SUB-SECTION:** *Add a sub-section addressing the No Action Alternative (which is currently missing). Note that it would simply state that there would be no unavoidable adverse effects on visual resources.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 1611:**

*(Section 5.3.16, Multiple Pages)*

*Recommend including the following additional visual mitigation measures (best management practices):*

- 1. “Skylining” of transmission towers, communication towers, and other structures should be avoided within the corridor; that is, they should not be placed on ridgelines, summits, or other locations where they will be silhouetted against the sky from important viewing locations. Skylining draws visual attention to the project elements and can greatly increase visual contrast.*
- 2. Where possible, ROWs and roads within a corridor should follow the edges of clearings (where they would be less conspicuous) rather than passing through the center of clearings.*
- 3. Because visual impacts are usually lessened when vegetation and ground disturbances are minimized, siting within a corridor should take advantage of existing clearings to reduce vegetation clearing and ground disturbance.*
- 4. Low-profile structures should be chosen whenever possible to reduce their visibility.*
- 5. Design and locate structures and roads to minimize and balance cuts and fills. Reducing cut and fill has numerous visual benefits, including fewer fill piles, landform and vegetation that appears more natural, fewer or reduced color contrasts with disturbed soils, and reduced visual disturbance from erosion and the establishment of invasive species.*
- 6. Strip, stockpile, and stabilize topsoil from site before excavating earth for facility construction.*
- 7. Materials, coatings, or paints having little or no reflectivity should be used whenever possible on all project elements (buildings, fences, signs, pipelines, vaults, drains, etc).*

8. *Grouped structures should all be painted the same color to reduce visual complexity and color contrast.*
9. *Include this one if any segments of the pipeline are not buried: Above-ground pipelines should be painted/coated to match their surroundings.*
10. *A site reclamation plan should be in place prior to construction. Reclamation of the construction ROW should begin immediately after construction of a given segments to reduce the likelihood of visual contrasts associated with erosion and invasive weed infestation and to reduce the visibility of impacted areas as quickly as possible. Interim restoration should be undertaken as soon as possible after disturbances.*
11. *Visual impact mitigation objectives and activities should be discussed with equipment operators before construction activities begin.*
12. *Existing rocks, vegetation, and drainage patterns should be preserved to the maximum extent possible.*
13. *Final width of access roads should be on what is necessary to provide access post-construction.*
14. *Installation of gravel and pavement should be avoided where possible to reduce color and texture contrasts with the existing landscape. Temporary but necessary gravel and other surface treatments should be removed or buried once no longer needed.*
15. *The color of gravel access roads should blend with the existing landscape colors.*
16. *For road construction, excess fill should be used to fill uphill-side swales to reduce slope interruption that would appear unnatural and to reduce fill piles. Road-cut slopes should be rounded, and the cut/fill pitch should be varied to reduce contrasts in form and line; the slope should be varied to preserve specimen trees and nonhazardous rock outcroppings.*
17. *Benches should be provided in rock cuts to accent natural strata.*
18. *Topsoil from cut/fill activities should be segregated and spread on freshly disturbed areas to reduce color contrast and aid rapid revegetation. Topsoil piles should not be left in sensitive viewing areas.*
19. *Disposal of excess fill material downslope should be avoided in order to avoid creating color contrast with existing vegetation/soils.*
20. *Sculpt and shape natural or previously excavated bedrock landforms when excavation of these landforms are required. Integrate percent backslope, benches, and vertical variations into final landform that repeats the natural shapes, forms, textures, and lines of the surrounding landscape. Integrate and transition the earthen landform into the excavated bedrock landform. Sculpted rock face angles, bench formations, and backslope need to adhere to the natural bedding planes of the natural bedrock geology. Half-case drill traces from pre-split blasting are not to remain evident in the final rock face.*
21. *Construction on wet or frozen soils should be avoided to reduce erosion.*
22. *If any culverts are to be used, add this one: Culvert ends should be painted or coated to reduce color contrasts with existing landscape.*
23. *Signage and markers should be minimized. Reverse sides of signs and mounts should be painted or coated to reduce color contrasts with the existing landscape. Markers should be only as tall as necessary to be seen and those along roads should be installed parallel to travel on road. No reflective or yellow or white signs/markers should be used.*
24. *Contour soil borrow areas, cut and fill slopes, berms, waterbars, and other disturbed areas to approximate naturally occurring slopes, thereby avoiding form and line contrasts with the existing landscapes. Contouring to rough texture would trap seed and discourage off-road travel, thereby reducing associated visual impacts.*
25. *Randomly scarify and roughen cut slopes to reduce texture contrasts with existing landscapes and aid in revegetation.*
26. *Constructed berms would be shaped to mimic the lines, forms and textures of the existing landscape.*

**UDWRe Response:**

**The mitigation measures have been added to the text.**

**BLM Comment 1612:**

*(Section 5.3.17.1.1, Page 5-779)*

**Line 2:** Replace “endangered” with “special status”.

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1613:**

*(Section 5.3.17.1.2, Page 5-779)*

*This analysis is rather weak. Recommend referencing the 2011 Northern Arizona Proposed Withdrawal FEIS, Section 3.2 for a very good, detailed presentation of air quality in Northern Arizona.*

*Using that document as a reference, recommend rewriting this section to say:*

*“Since 1970, the Clean Air Act (CAA) and subsequent amendments have provided the authority and framework for EPA regulations of ambient air and pollutant emission sources. The CAA is the primary federal legislation controlling air quality standards and also includes special provisions to help protect air quality in national parks and other federal lands. The CAA gives federal land managers certain responsibilities and opportunities to participate in decisions being made by regulatory agencies that might affect air quality in federally protected areas.*

*The EPA regulations promulgated pursuant to the authority provided under the CAA established requirements for monitoring, controlling, and documenting activities that would affect ambient air concentrations of certain pollutants that may endanger public health or welfare. Specifically, these regulations have the overall objective of achieving and maintaining adherence to appropriate standards for ambient air quality which are referred to as National Ambient Air Quality Standards (NAAQS). The NAAQS were set at levels to provide an ample margin of safety to protect both public health and the environment.*

*Geographic areas commonly referred to as airsheds, which may not coincide with political boundaries, are designated attainment, non-attainment, or unclassified areas for each of the six criteria pollutants covered by the NAAQS (carbon monoxide, lead, nitrogen dioxide, particulate matter with a nominal aerodynamic diameter of less than 10 micrometers (PM10), and fine particulates with a nominal aerodynamic diameter of less than 2.5 micrometers (PM2.5). Areas in which levels of a criteria pollutant measure below the NAAQS are designated “attainment” areas; when a designated air quality area or airshed within a state exceeds the NAAQS, that area may be designated a “non-attainment” area. Typically, non-attainment areas are urban regions and/or areas with higher-density industrial development. The given status of an area is designated separately for each criteria pollutant; one area may have all three classifications. An unclassified designation indicates that the status of attainment has not been verified through data collection.*

*The existing air quality in the area is expected to be typical of undeveloped regions in the western United States. Data collected in the area of potential effect is limited. Areas with limited ambient air quality data typically indicate that ambient pollution levels are usually near or below detection limits. Locations vulnerable to decreasing air quality include the areas immediately surrounding surface-disturbing activities such as energy and mineral development projects, farm tilling, and local population centers affected by residential emissions.”*

**UDWRe Response:**

**This section has been revised to be more descriptive.**

**BLM Comment 1614:**

*(Section 5.3.17.1.2.2, Page 5-779)*

*Refer to Table 3.2-5 in the Northern Arizona Proposed Withdrawal FEIS for emissions data of the six criteria pollutants in northern AZ/southern UT (including more data than just for St. George). There is a lot of info. in the FEIS that would be helpful to add to this PLP.*

**UDWRe Response:**

**The Northern Arizona Proposed Withdrawal FEIS background information was reviewed and considered. Background information was inserted as appropriate and relevant.**

**BLM Comment 1615:**

*(Table 5-149, Page 5-780)*

*Add air quality data for Pipe Spring National Monument and Page, AZ (see Sec. 3.2 of Northern Arizona Proposed Withdrawal FEIS).*

**UDWRe Response:**

**The Northern Arizona Proposed Withdrawal FEIS background information was reviewed and considered. Background information was inserted as appropriate and relevant. However, Page and Pipe Springs Monument air quality data was not found.**

**BLM Comment 1616:**

*(Section 5.3.17.1.2.3, Page 5-781)*

*This section is focusing strictly on the St. George area, yet most of the LPP project is nowhere near St. George. Please rewrite to discuss the meteorology/climate of northwestern Arizona and southwestern Utah (i.e., southern Kane County). Add weather data for Pipe Springs National Monument and Page. See Sec. 3.2.1 of the Northern Arizona Proposed Withdrawal FEIS.*

**UDWRe Response:**

**Additional meteorological information from Northern Arizona Proposed Withdrawal FEIS has been added.**

**BLM Comment 1617:**

(Section 5.3.17.1.2.4, Page 5-782)

*This section does not seem to clearly say much. It is poorly written and does not have much of a point. Recommend giving a brief summary of the six criteria pollutants, then stating that the pollutant of concern in the APE is fugitive dust (PM<sub>10</sub> and PM<sub>25</sub>).*

*Somewhere in this section, include information on fugitive dust (from vehicles traveling on unpaved roads, wood burning, agriculture (crop tilling and livestock), and construction.*

**Fugitive Dust**

• **Line 3:** *Fugitive dust can originate in large amounts also, although this is usually short-term (except during wind events). Add this.*

**UDWRe Response:**

**Text revisions have been made to provide the summary of the criteria pollutants and include suggestions.**

**BLM Comment 1618:**

(Section 5.3.17.1.2.4, Page 5-783)

**2nd paragraph:** *Rewrite beginning of paragraph to read “The LPP Project area is designated as an attainment area for all criteria pollutants, including fugitive dust (PM<sub>10</sub> and PM<sub>25</sub>). St. George is currently designated as unclassified and UDEQ ...” (The second sentence is deleted because of the suggested new text for Sec. 5.3.17.1.2, which talks about the designations.)*

*FYI – The AZ Strip is designated as “attainment” (not unclassified).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1619:**

(Section 5.3.17.1.2.4, Page 5-784)

**3rd sentence on page:** *The conclusion that “most of the PM would be dispersed before it leaves the [Hurricane Cliffs Forebay] construction area because the site is quite large” is inaccurate. While at least some would be dispersed, if it takes up to 4,300 feet to disperse, then much of the PM would travel OUTSIDE the construction area. Please acknowledge this.*

**5th sentence:** *This statement (concerning Regulating Tank-2) is untrue. First of all, this tank would be located at a high elevation point, meaning PM would travel further (since there is nothing topographically around it to “catch” dust). Also, the total size of the site is only 2.87 acres (according to page 3-22 of this PLP). Thus, PM produced would not be contained within the site because PM could travel a distance of up to (950 feet). Please correct this error.*

**UDWRe Response:**

**3rd sentence on page - The project is now assumed to use only Tier 4 equipment which has lower PM emissions. This changes the dispersion calculations somewhat. In addition,**

some revised assumptions were made regarding the area of disturbance. The text will be revised to reflect the appropriate revised information.

**5th sentences – Due to the conservative nature of the assumptions for fugitive dust generation, the higher and more exposed facilities were determined to be within the variance of the evaluation.**

**BLM Comment 1620:**

*(Section 5.3.17.1.2.4, Page 5-788)*

**General comment:** *Each of these sections should have a general discussion that provides background information first (info. such as where each pollutant comes from – i.e., how it is generated), THEN go on to give project-specific information.*

**Nitrogen Dioxide**

- **1st paragraph, line 1:** *What is “Tier 3 equipment”? Please describe in the text.*
- **1st paragraph, 2nd sentence:** *The conclusion that “most of the PM would be dispersed before it leaves the [Hurricane Cliffs Forebay] construction area because the site is quite large” is inaccurate. While at least some would be dispersed, if it takes up to 4,300 feet to disperse, then much of the PM would travel OUTSIDE the construction area. Please acknowledge this.*
- **1st paragraph, 3rd sentence:** *Acknowledge that dust at facilities such as Regulating Tank-2 would leave the site (since their total size would be only 2.87 acres, according to page 3-22 of this PLP).*

**Carbon Monoxide**

- **2nd sentence:** *This statement (concerning Regulating Tank-2) is untrue. First of all, this tank would be located at a high elevation point, meaning CO could travel further (since there is nothing topographically around it to capture it). Also, the total size of the site is only 2.87 acres (according to page 3-22 of this PLP), which is smaller than 328 feet. Although the CO wouldn’t travel real far outside the site, it still would travel, so this should be corrected.*

**Sulfur Dioxide**

- **3rd sentence:** *This statement (concerning SO<sub>2</sub> being confined within construction areas) is untrue, at least for the smaller sites. The smaller sites, such as Regulating Tank-2 at only 2.87 acres, are substantially smaller than the 830 feet this pollutant can disperse. This should be corrected.*

**UDWRe Response:**

**General Comment – The text has been revised to include recommended changes.**

**NO<sub>2</sub> – Tier 4 equipment is assumed to be used and has been defined. Tier 4 equipment reduces the emissions of NO<sub>2</sub> and the information has been adjusted in the text.**

**PM – This was under NO<sub>2</sub> but emissions are to be reduced dramatically which have changed the dispersion information.**

**CO – Tier 4 equipment and additional information has allowed for revision of the dispersion distances which have been incorporated into the text.**

**SO<sub>2</sub> – The assumed use of ultra low sulfur fuel has reduced SO<sub>2</sub> emissions and the text has been revised accordingly.**

**BLM Comment 1621:**

(Section 5.3.17.1.2.7, Page 5-793)

**Line 3:** Please explain what is meant by “worse-case scenario”.

**UDWRe Response:**

**The text “worst-case scenario” has been replaced with “conservative scenario”.**

**BLM Comment 1622:**

(Section 5.3.17.1.2.8, Page 5-793)

**Line 2:** Please describe what “additional equipment” would be required.

**UDWRe Response:**

**Additional equipment has been included in text.**

**BLM Comment 1623:**

(Section 5.3.17.1.2.9, Page 5-794)

**1st line:** Should read “The emissions from operating the”.

**3rd line:** This statement that “[t]raffic to and from each facility would be minimal” is untrue, at least according to the transportation section of this PLP (see page 5-711, Section 5.3.15.1.3.6). Please revise this analysis accordingly.

**Line 9:** Define what is meant by “minimal local air pollution”.

**Last sentence in section:** Delete, and incorporate this entire section into the actual impacts analysis by alternative.

**UDWRe Response:**

**1st line – Text revisions have been made.  
3rd line – Text revisions have been made.  
Line 9 – Text revisions have been made to clarify intent of statement.  
Last Sentence – UDWRe’s view is that the text is adequate as written. The comment has been noted.**

**BLM Comment 1624:**

(Section 5.3.17.1.2.10, Page 5-794)

**NEW SUB-SECTION:** There needs to be a sub-section on “Visibility,” which is very important in the area of the LPP project. See pages 3-30 and 3-31 of the Northern Arizona Proposed Withdrawal FEIS for a good discussion on this subject.

**UDWRe Response:**

**Visibility has been addressed in the text.**



**BLM Comment 1625:**

*(Section 5.3.17.2.1, Page 5-794)*

*9th line: Need to also use secondary standards, at least for how they relate to visibility. Visibility is VERY important in this remote region of the southwest.*

**UDWRe Response:**

**Text has been revised to include secondary standard to address visibility.**

**BLM Comment 1626:**

*(Section 5.3.17.2.1.1 and Table 5-156, Page 5-795)*

*“Human receptors” should not include just residences and businesses. It should also include the “visitors and tourists” referenced in the previous sentence. Areas on the public lands where the recreating public tend to frequent are places such as:*

- ☐ *Toroweap (Mt. Trumbull) Road*
- ☐ *Kanab Creek crossing*
- ☐ *Clayhole Road*
- ☐ *Cottonwood Road*
- ☐ *Paria Rivercrossing*
- ☐ *Other locations within GSENM or GCNRA?*

*This should also be added to Table 5-156.*

**UDWRe Response:**

**Likely visitor locations will be identified in table per request.**

**BLM Comment 1627:**

*(Section 5.3.17.2.1.2, Page 5-796)*

*2nd paragraph, line 1: What about small wildlife, many of which are not so mobile? Please address those animals.*

*3rd paragraph: This statement about wildlife not being significantly affected by being displaced for a few weeks up to a few months is not accurate. If that displacement occurs during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

**UDWRe Response:**

**The effect on wildlife from the air quality is expected to not be a significant impact. The comment has been noted.**

**BLM Comment 1628:**

*(Section 5.3.17.2.2, Page 5-796)*

*Delete this as a separate and distinct section ... this information should be incorporated into the analysis of impacts from each alternative. Suggest that it be introductory information in the Air Quality Effects section (5.3.17.2.3).*

**UDWRe Response:**

**This appears to be the appropriate location for this text. The comment has been noted.**

**BLM Comment 1629:**

*(Section 5.3.17.2.3.1, Page 5-797)*

**1st paragraph**

- **2nd through 4th lines:** Should address more than just residences and businesses. It should also include the “visitors and tourists” referenced in Sec. 5.3.17.2.1.1.
- **6th line:** Either summarize the applicable BMPs here, or reference Section 5.3.17.3
- **Last 2 sentences:** This statement about wildlife not being “measurably affected” is not accurate. The impacts would come from being displaced for a few weeks up to a few months. If that displacement occurs during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.

**2nd paragraph**

- **1st 2 sentences:** Should address more than just residences and businesses. It should also include the “visitors and tourists” referenced in Sec. 5.3.17.2.1.1.
- **Last 2 sentences:** This statement about wildlife not being “measurably affected” is not accurate. The impacts would come from being displaced for a few weeks up to a few months. If that displacement occurs during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.

**3rd paragraph**

- Should address more than just residences and businesses. It should also include the “visitors and tourists” referenced in Sec. 5.3.17.2.1.1.
- Add a discussion on impacts to wildlife.

**UDWRe Response:**

**1st Paragraph**

**2nd through 4th lines - Visitors have been included in text.**

**6th line – Agreed, section reference has been included.**

**Last two sentences – Refer to Wildlife Resource Study**

**2nd Paragraph - This has been addressed in Wildlife Resource Study. The effect on wildlife from the air quality is expected to not be a significant impact. The comment has been noted.**

**1st 2 sentences – Text has been revised to include visitor references as appropriate.**

**Last 2 sentences – Refer to Wildlife Resource Study**

**3rd paragraph – Text has been revised to include visitor references as appropriate. Refer to Wildlife Resource Study for impacts on wildlife.**

**BLM Comment 1630:**

*(Section 5.3.17.2.3.2, Page 5-797 and 5-798)*

**2nd paragraph**

• *This statement about wildlife not being “measurably affected” is not accurate. The impacts would come from being displaced for a few weeks up to a few months. If that displacement occurs during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

**3rd paragraph**

- *Should address more than just residences and businesses. It should also include the “visitors and tourists” referenced in Sec. 5.3.17.2.1.1.*
- **4th line:** *Either summarize the applicable BMPs here, or reference Section 5.3.17.3*
- *Add a discussion on impacts to wildlife.*

**4th paragraph**

- *Should address more than just residences and businesses. It should also include the “visitors and tourists” referenced in Sec. 5.3.17.2.1.1.*
- *Add a discussion on impacts to wildlife.*

**UDWRe Response:**

**2nd paragraph – This has been addressed in Wildlife Resource Study. The effect on wildlife from the air quality is expected to not be a significant impact. The comment has been noted.**

**3rd paragraph – Text has been revised to include comments.**

**4th paragraph – Text has been revised to include visitors. The effect on wildlife from the air quality is expected to not be a significant impact.**

**BLM Comment 1631:**

*(Section 5.3.17.2.3.4, Page 5-798)*

*There is no transmission lines alternative – transmission lines are part of the other alternatives. This discussion on air quality impacts should therefore be merged into the previous alternatives sections.*

**Line 1:** *“Electrical Transmission Lines System” should not be capitalized.*

**Last two sentences:** *While BLM does not disagree with this determination, the “analysis” included is much too cursory and does not really support that conclusion. Please add some additional analysis.*

**UDWRe Response:**

**First Comment – The transmission line is not indicated to be an alternative but rather work that needs distinct evaluation.**  
**Line 1 – Agree, have removed capitals.**  
**Last two sentences – Text has been revised to add information and BMP reference.**

**BLM Comment 1632:**

*(Section 5.3.17.2.3.5, Page 5-798)*

***Last sentence:** This conclusion is not supported by the text. Need to explain why growth of St. George would not cause NAAQS to be exceeded. Remember that it is metropolitan areas where these standards are exceeded.*

**UDWRe Response:**

**The LPP Project is not a direct cause of population growth for the project area and therefore is not a direct cause of any NAAQS violations.**

**BLM Comment 1633:**

*(Section 5.3.17.2.3.6, Page 5-798 and 5-799)*

**Paragraph 1**

*Do not agree with the conclusions reached here. If residences are converted to desert landscaping, they would likely have a gravel cover, which would protect the underlying soils from wind erosion. Particulate concentrations would only exceed NAAQS if everyone in the city did this landscape conversion all the same time (which is highly unlikely). Any PM added to the air would be temporary, and quickly dissipate.*

**Paragraph 2**

*Do not agree with the conclusions reached here. If residences are converted to desert landscaping, they would likely have a gravel cover, which would protect the underlying soils from wind erosion. Particulate concentrations would only exceed NAAQS if everyone in the city did this landscape conversion all the same time (which is highly unlikely). Any PM added to the air would be TEMPORARY, and quickly dissipate, not permanent.*

**UDWRe Response:**

**It is estimated that desert landscaping is likely to allow greater amounts of particulate release than typical vegetated landscaping, especially during wind events (depending upon mitigation measures). Vegetation tends to trap particulate matter to greater degrees than hard landscaping including desert landscaping.**

**BLM Comment 1634:**

*(Section 5.3.17.2.3.7, Page 5-799)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add.*

**UDWRe Response:**

**The suggested sub-section has been added.**

**BLM Comment 1635:**

(Section 5.3.17.3, Page 5-799)

*1st paragraph, line 1: The acronym “BMP” has already been defined in Chapter 5, so don’t do so again here.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1636:**

(Section 5.3.17.2.3.6, Pages 5-798 – 5-799)

*“Air quality would be affected by desert landscape construction activities resulting from eliminating outdoor residential watering with culinary supplies as part of the No Lake Powell Water Alternative. Converting traditional residential landscapes to desert landscapes would increase the disturbed land area within residential communities in the St. George metropolitan area, potentially exposing residents to particulates dispersed by the wind during construction activities. The particulate concentrations could exceed NAAQS beyond dispersion zones, resulting in significant indirect air quality effects. These indirect effects may be partially mitigated by implementing BMPs; however, culinary water could not be used to control dust because it would not be available for outdoor watering and dust control.*

*Air quality could be permanently affected by converting traditional residential landscapes to desert landscapes within the St. George metropolitan, resulting in increased airborne particulate matter generated from increased exposed soil areas. The particulate concentrations could occasionally exceed the NAAQS beyond dispersion zones during windstorms and affect human receptors, resulting in significant indirect air quality effects. The indirect effects could be partially mitigated by implementing BMPs, such as placing crushed stone or other natural materials over exposed soils; however, culinary water could not be used to control dust particles because it would not be available for outdoor watering and dust control.*

*Additional power demand from the KCWCD No Lake Powell Water Alternative is likely negligible since it would involve pumping water from Kanab Creek watershed wells. However, the WCWCD would significantly increase power demand from the reverse osmosis water treatment facility, and the reduced power demand from decreasing outdoor culinary water use would not offset the new treatment power demand. The additional power demand is expected to be approximately 50 million kWh per year. This translates into additional emissions of 150 tons of SO<sub>2</sub>, 60 tons of NO<sub>2</sub>, 20 tons of CO, and 230 tons of particulate matter annually.”*

*This is not appropriate. The bias for green lawns in St. George needs to go away and a true analysis needs to occur.*

**UDWRe Response:**

**A revised version of this text has been added.**

**It is estimated that desert landscaping is likely to allow varying degrees of greater particulate release than typical landscaping during wind events depending upon mitigation measures.**

**BLM Comment 1637:**

*(Section 5.3.17.2.4, Page 5-799)*

*“Preliminary project design and meetings with local and regional power entities indicate that additional power generating facilities would not be needed to supply electricity for the LPP Project because there is currently enough power available to meet the projected power demands. The power required to pump water through the intake and the booster pump stations would be generated at existing power stations in Arizona and transmitted to the pump station sites. The proposed pumped storage hydro generating station at the Hurricane Cliffs would consume available electric power during off-peak hours to pump water into the forebay reservoir for storage and then release during peak demand hours to generate electricity. Therefore, the LPP Project would not cause indirect air quality effects from new power generation emissions because new power generation facilities would not be needed.”*

*This is false, if this were the case why is Garkane pursuing a new ROW and currently building an EA to convert their current system that would not support LPP along with their other needs to a transmission line that would be connected to this pipeline?*

**UDWRe Response:**

**Garkane Energy Cooperative, Inc is upgrading their power transmission system to have more capacity to serve existing and future customers as well as to provide transmission redundancy to avoid power outages. Power generating capacity is available as of 2016 to supply the power needs to the LPP project from existing generating sources in Arizona.**

**BLM Comment 1638:**

*(Section 5.3.17.3.1, Page 5-800)*

***11th line on page:** This contradicts page 5-788, which states that NO Tier 4 equipment would be used.*

***Last paragraph:** This does not seem like a BMP, but rather an analysis of the effects of BMPs.*

*This section should only be the list of applicable BLMs, so move this text elsewhere.*

**UDWRe Response:**

**11th line on page - This has been revised to use only Tier 4 equipment.  
Last paragraph – The text has been moved and revised accordingly.**

**BLM Comment 1639:**

*(Section 5.3.17.3.2, Page 5-800)*

*This is not a list of BMPs, but rather an analysis of the effects of BMPs. This section should only be the list of applicable BLMs, so move this text to Section 5.3.17.2.3.6.*

**UDWRe Response:**

**The text has been revised accordingly.**

**BLM Comment 1640:**

*(Section 5.3.17.3.2, Page 5-800)*

*“The indirect air quality effects resulting from the No Lake Powell Water Alternative could be partially mitigated by implementing BMPs including physical covers and other liquid-based dust suppressants throughout residential landscapes converted to desert landscapes. These mitigation measures are not expected to control all fugitive dust over the long-term and air quality effects from fugitive dust would continue to occur. Monitoring would be necessary to determine the effectiveness of dust suppression mitigation measures implemented on residential desert landscapes.”*

*This needs to be rewritten by an air quality specialist.*

**UDWRe Response:**

**The text has been revised. The comment has been noted.**

**BLM Comment 1641:**

*(Section 5.3.17.4.1, Page 5-800)*

*“The Proposed Action air quality effects would have no measurable cumulative effects when combined with the effects of the following actions:*

- Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead EIS and ROD • Operation of Glen Canyon Dam EIS and ROD*
- Interim Surplus Criteria EIS and ROD*
- Development and Implementation of a Protocol for High-Flow Experimental Releases from Glen Canyon Dam, Arizona, 2011 through 2020 EA*
- Bureau of Reclamation and National Park Service LTEMP EIS The Proposed Action effects on Lake Powell elevations and Glen Canyon Dam releases would not be measurable on a daily basis as demonstrated by the results of CRSS modeling, therefore, there would be no measurable cumulative effects with these listed past, present and reasonably foreseeable future actions.”*

*Please explain the reasoning how the proposed action with these other documents makes a no measurable effect? This section doesn’t make sense and when compared to the next comments contradicts itself.*

**UDWRe Response:**

**These are all water operations actions which have no measurable effect on air quality thus cannot have a cumulative effect with the air quality impacts from this project. In addition, the projects will be constructed at various times which will not necessarily be in conjunction with the LPP project.**

**BLM Comment 1642:**

*(Section 5.3.17.4.1, Page 5-801)*

***1st paragraph after the bullet list:** Delete – a discussion of Glen Canyon Dam releases and Lake Powell elevations is not relevant to a discussion on air quality.*



*2nd paragraph, lines 1 and 4: Delete “minimal” and “minor” – just say there would be short-term cumulative effects. Later text in this paragraph states what the degree of those impacts would be, which is proper.*

**UDWRe Response:**

**1st paragraph after the bullet lists – The text has been revised to clarify.  
2nd paragraph, lines 1 and 4 – The text has been revised.**

**BLM Comment 1643:**

*(Section 5.3.17.4.4, Page 5-801)*

*“The No Lake Powell Water Alternative would have short-term and potential long-term direct cumulative effects on air quality with the effects of the Southern Corridor Highway. These cumulative effects would be most intense near the Washington Fields Diversion where the two actions would intersect at the sites of the No Lake Powell Water Alternative pump station, diversion pipeline, reverse osmosis water treatment facility, and Warner Valley Reservoir embankment dam. Fugitive dust could be generated from exposed soils from both projects that could locally exceed NAAQS particulate matter criteria.”*

*The last sentence of this paragraph contradicts 5.3.17.4.1 proposed Action. The dust generated by this part of the project will not have measureable cumulative effects but this project in the Washington fields will?*

*This section appears to be biased against the No LPP water alternative in contrast with the pro-build alternatives. This section needs to be rewritten by an air quality specialist.*

**UDWRe Response:**

**The Southern Corridor Highway is nearly completed and the construction will not be cumulative with the LPP construction or operation. The Southern Corridor Highway may generate some particulate matter from the roadway embankments and associated disturbed areas. The particulates generated from desert landscaping combined with the particulates generated from disturbed areas associated with the Southern Corridor Highway could cause cumulative particulate air quality impacts.**

**BLM Comment 1644:**

*(Section 5.3.17.4.5, Page 5-801)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO cumulative noise under the No Action Alternative.*

**UDWRe Response:**

**The suggested sub-section has been added.**

**BLM Comment 1645:**

*(Section 5.3.17.5.1, Page 5-801)*

*“The Proposed Action would have minor short-term unavoidable adverse effects on air quality when fugitive dust emissions exceed NAAQS particulate matter criteria at the forebay reservoir construction site. Most of the fugitive dust would disperse to concentrations below the NAAQS particulate matter criteria within the construction site. These air quality effects would be short-term unavoidable adverse effects. Construction equipment emissions below the NAAQS criteria would have minimal short-term unavoidable adverse effects on air quality.”*

*This contradicts page 5-801.*

**UDWRe Response:**

**It is unclear what the comment is noting as contradictory. The comment has been reviewed and noted.**

**BLM Comment 1646:**

*(Section 5.3.17.5.1, Page 5-801)*

***Line 4:** Question the conclusion that most fugitive dust would disperse to concentrations below NAAQS criteria “within the construction site.” While at least some would be dispersed, if it takes up to 4,300 feet to disperse, then much of the PM would travel OUTSIDE the construction area. Please acknowledge this.*

**UDWRe Response:**

**The text has been revised to clarify the statement.**

**BLM Comment 1647:**

*(Section 5.3.17.5.4, Page 5-801)*

*This is not accurate. If residences are converted to desert landscaping, they would likely have a gravel cover, which would protect the underlying soils from wind erosion.*

*Particulate concentrations would only exceed NAAQS if everyone in the city did this landscape conversion all the same time (which is highly unlikely). Any PM added to the air would be TEMPORARY, and quickly dissipate, not permanent. This conclusion should be corrected/revised.*

**UDWRe Response:**

**It is estimated that desert landscaping is likely to allow varying degrees of greater particulate release than typical landscaping during wind events depending upon mitigation measures.**

**BLM Comment 1648:**

*(Section 5.3.17.5.4, Page 5-802)*

*“The No Lake Powell Water Alternative could result in periodic unavoidable adverse effects on air quality during high wind events. Fugitive dust not controlled by BMPs would be mobilized*

*beyond dispersion zones and occasionally exceed NAAQS. These periodic unavoidable adverse effects on air quality could be permanent.”*

*If this were truly the case it would be happening right now and it’s not. If there is, where is the language/data that supports this opinion?*

**UDWRe Response:**

**It is estimated that with additional water restrictions and large scale alterations to desert landscaping there would be varying degrees of additional particulate matter available for becoming airborne in windy events.**

**BLM Comment 1649:**

*(Section 5.3.17.5.5, Page 5-802)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to air quality under the No Action Alternative.*

**UDWRe Response:**

**Text will include the noted section.**

**BLM Comment 1650:**

*(Table 5-158, Page 5-807)*

***Notes section:** The reference “Jenbacher 2011” is not listed in Sec. 5.3.18.6 – please add it.*

**UDWRe Response:**

**The reference has been added.**

**BLM Comment 1651:**

*(Section 5.3.18.1.2, Page 5-807)*

***2nd line under table:** Define “A-weighted” in the text (or in a footnote).*

**UDWRe Response:**

**The note has been added.**

**BLM Comment 1652:**

*(Table 5-159, Page 5-808)*

***Notes section:** The reference “CUWCD 2004” is not listed in Sec. 5.3.18.6 – please add it.*

**UDWRe Response:**

**The reference has been added.**

**BLM Comment 1653:**

*(Section 5.3.18.1.2.1, Page 5-808)*

*2nd line after Table 5-159: What time of day was the background noise data collected? July (during monsoon season) tends to have very windy weather, unless measurements were collected very early in the day. Baseline sound data (to determine “baseline”) should have been collected during calm weather ... was that the case?*

*3rd line after Table 5-159: Define “dBA” in the text (or in a footnote).*

**UDWRe Response:**

**The data was obtained in July throughout various portions of the day to obtain representative samples of background noise at various locations.**

**3<sup>rd</sup> line – The text has been revised to address the comment.**

**BLM Comment 1654:**

*(Table 5-160, Page 5-808)*

*1st row, 1st column: Define “TL” in the notes section.*

*2nd row, 1st column: “forebay” should not be capitalized.*

*6th row, 1st column: Shouldn’t this be “SE Corner Alternative”?*

**UDWRe Response:**

**The suggested definition and edits have been incorporated into the text as appropriate.**

**BLM Comment 1655:**

*(Table 5-160, Page 5-809)*

*5th row, 1st column: Shouldn’t this be “SE Corner Alternative”?*

*Notes section: Why was this data was not collected at a different time of year (i.e., not during monsoon season), when there would not have been as much wind. Collecting data at that time of year may have caused the background noise level to be unusually high. Depending on time of day, summer can be one of the windiest times of year. It would be good to also collect data at a different time of year (for comparison).*

**UDWRe Response:**

**The suggested edit from the first paragraph of the above comment has been incorporated. The sampling data was taken on days when it was relatively calm and determined to be a good representation of a relatively calm period.**

**BLM Comment 1656:**

*(Section 5.3.18.1.3, Page 5-814)*

*1st line on page: What “assumptions” were “made for each phase of ... construction”? Please clearly describe that here.*

**UDWRe Response:**

**The assumptions made have been described in notes.**

**BLM Comment 1657:**

*(Section 5.3.18.1.3, Page 5-815)*

*1st paragraph, line 2: 5,300 feet for noise to dissipate is quite a distance. Even 1,900 is quite a bit ... Please verify that this was built into the analysis of impacts (because peak construction noise would be heard for 0.5 to 1.0 miles from the actual construction sites).*

*1st paragraph, line 4: Insert “it is likely that” before “the distances required”.*

*2nd paragraph, line 2: Replace “the area which could be” with “the area that could be”.*

*3rd paragraph, 1st sentence: Please explain why trench blasting would be less noisy (it is intuitive, but explain it so the average reader understands).*

**UDWRe Response:**

**1<sup>st</sup> paragraph, line 2 – These distances are correct but represent an absolute worst case scenario.**

**1<sup>st</sup> paragraph, line 4 – The text has been inserted.**

**2<sup>nd</sup> paragraph, line 2 – The text has been edited.**

**3<sup>rd</sup> paragraph, 1<sup>st</sup> sentence – The text has been revised to address the comment.**

**BLM Comment 1658:**

*(Section 5.3.18.1.3.2, Page 5-815)*

*Line 5: Replace “may” with “would”.*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1659:**

*(Section 5.3.18.1.3.3, Page 5-815)*

*Line 4: End of line should read “... quite large and the noise level would likely”.*

*Line 5: Insert “unless activities occurred at the periphery of the construction area” after “not leave the construction site”.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1660:**

*(Section 5.3.18.2.1.1, Page 5-816)*

*Last sentence: Add to the end of this sentence “, as well as visitors using the public lands to recreate.”*

**UDWRe Response:**

**The suggested edit has been incorporated.**

**BLM Comment 1661:**

*(Table 5-163, Page 5-816 and 5-817)*

*“Potential human receptors” should not include just residences and businesses. It should also include areas on the public lands where the recreating public tend to frequent, places such as:*

- ☐ *Toroweap (Mt. Trumbull) Road*
- ☐ *Kanab Creek crossing*
- ☐ *Clayhole Road*
- ☐ *Cottonwood Road*
- ☐ *Paria River crossing*
- ☐ *Other locations within GSENM or GCNRA?*

**UDWRe Response:**

**The suggested locations have been included in the text.**

**BLM Comment 1662:**

*(Section 5.3.18.2.1.1, Page 5-817)*

*1st paragraph after Table 5-163: This should also address locations near recreation sites (such as listed in Comment 1661 for Table 5-163).*

**UDWRe Response:**

**The suggested locations have been included in the text.**

**BLM Comment 1663:**

*(Table 5-164, Page 5-818)*

*Which reference does “OSHA 2009” refer to? There are two cited in Section 5.3.18.6. Please clarify.*

**UDWRe Response:**

**The text string “OSHA 2009” is a reference citation.**

**BLM Comment 1664:**

*(Section 5.3.18.2.1.2, Page 5-818)*

*Beginning of first sentence doesn’t make sense ...what does “located or temporarily in” mean? Please correct this.*

*5th line also doesn’t make sense ... what does “persons outside near” mean?*

**UDWRe Response:**

**The text has been revised.**

**BLM Comment 1665:**

*(Section 5.3.18.2.1.3, Page 5-818)*

**1st paragraph, lines 5-7:** *This is exactly what should be included in the analysis of impacts (i.e., considering outdoor noise that “is considered compatible with land use for extensive natural ... and recreational areas” as well as “lands in which serenity and quiet are of extraordinary significance” and the effects that the LPP project would have on the noise levels in those areas). Please build this into the analysis.*

**2nd paragraph, 2nd sentence:** *This statement about reproductive success of wildlife not being affected by moderately loud sounds is not true for species such as bighorn sheep. Desert bighorn sheep are very sensitive to human disturbance. Human encroachment in bighorn sheep habitat impacts the species through habitat fragmentation, increased noise, and an increased number of humans. Numerous researchers have documented altered bighorn sheep behavior in response to human-related disturbance, including hiking, camping, and motorized vehicle use. (This would also apply to construction activities.) Bighorn sheep may also alter their use of essential resources resulting in physiological effects or abandonment of traditional habitat as a result of human disturbance (Wallis 2005). Frequent vehicle activity causes sheep to reduce or abandon their use of water sources and surrounding areas. In addition, energy losses due to disturbances (flight, loss of foraging time, and increased stress levels) might result in deleterious effects on physiology, behavior, or fat reserves of sufficient magnitude to reduce survival and reproductive success. Research has shown that the particular type of human activity was the most influential variable affecting the behavioral response of bighorn sheep to disturbance (Papouchis et al 2001).*

*Thus, please acknowledge this and revise the text in this section accordingly.*

**References cited above:**

*Papouchis, C.M., F.M. Singer, and W.B. Sloan. 2001.  
Responses of Desert Bighorn Sheep to Increased Human Recreation. Journal of Wildlife  
Management, 65:573-582.*

*Wallis, K. 2005. The Biogeography of the Sierra Nevada Bighorn Sheep (Ovis canadensis sierra).  
Unpublished document. San Francisco State University.*

**UDWRe Response:**

**1<sup>st</sup> paragraph, lines 5-7 - The comment has been noted.**

**2<sup>nd</sup> paragraph, second sentence - It has been noted that there are some sensitive species that could potentially be affected; however, the nuisance levels at which they would be affected is not covered under this resource but it is not expected to be a significant impact.**

**BLM Comment 1666:**

*(Section 5.3.18.2.1.3, Page 5-819)*



*This determination (on effects not being significant) is not true. If construction activities occur during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

**UDWRe Response:**

**It has been noted that there are some sensitive species that could potentially be affected; however, the nuisance levels at which they would be affected is not covered under this resource but it is not expected to be a significant impact.**

**BLM Comment 1667:**

*(Section 5.3.18.2.2, Page 5-819)*

*Delete this as a separate and distinct section ... this information should be incorporated into the analysis of impacts from each alternative. As part of that, please note the following:*

- **2nd bullet:** “Construction noise levels below human health concerns but still an annoyance **SHOULD** be analyzed (per ANSI S12.40-1990, cited on page 5-818). There would be definite (at least short-term) effects on the recreating public in this area that is known for its remoteness and quiet. This effect would be less where the pipeline would parallel a paved highway, but it could be quite noticeable/substantial where it turns south of the Kaibab-Paiute Indian Reservation.
- **3rd bullet:** Delete completely – this is already mentioned on page 5-815.
- **3rd bullet:** Incorporate into the alternatives discussions.

**UDWRe Response:**

**Your comment has been noted. The text remains unchanged.**  
**2<sup>nd</sup> bullet – There would be some sound noticeable in recreation areas; however, this is not expected to be a significant impact especially considering how quickly the pipeline construction would be moving. Thus it was not analyzed further.**  
**3<sup>rd</sup> bullet – The comments have been noted.**

**BLM Comment 1668:**

*(Section 5.3.18.2.3.1, Page 5-819)*

**1st paragraph, 5th line:** BMPs such as what? Please describe.

**1st paragraph, 7th line:** *This determination (on effects not being significant) is not true. If construction activities occur during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

**2nd paragraph, 3rd sentence:** *This determination (on effects not being significant) is not true. If construction activities occur during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

**UDWRe Response:**

**1<sup>st</sup> paragraph, 5<sup>th</sup> line – The BMPs are discussed in the mitigation sections.**  
**1<sup>st</sup> paragraph, 7<sup>th</sup> line - It has been noted that there are some sensitive species that could potentially be affected; however, the nuisance levels at which they would be affected is not covered under this resource but it is not expected to be a significant impact.**

**BLM Comment 1669:**

*(Section 5.3.18.2.3.1, Page 5-820)*

*3rd through 5th lines on page: This needs to be discussed in more detail.*

*Last line in section: Add “in Section 5.3.18.3” to the end of the sentence.*

**UDWRe Response:**

**The text has been revised as appropriate. The comment has been noted.**

**BLM Comment 1670:**

*(Section 5.3.18.2.3.2, Page 5-820)*

*1st paragraph, line 6: BMPs such as what? Please describe.*

*1st paragraph, lines 7-8: This determination (on effects not being significant) is not true. If construction activities occur during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

*Last line in section: Add “in Section 5.3.18.3” to the end of the sentence.*

**UDWRe Response:**

**1<sup>st</sup> paragraph, 6<sup>th</sup> line – The BMPs are discussed in the mitigation sections.**  
**1<sup>st</sup> paragraph, 7-8 lines - It has been noted that there are some sensitive species that could potentially be affected; however, the nuisance levels at which they could be affected is not covered under this resource but it is not expected to be a significant impact.**  
**Last line in section – The suggested text has been added.**

**BLM Comment 1671:**

*(Section 5.3.18.2.3.4, Page 5-820)*

*There is no transmission lines alternatives, but they are part of the other alternatives. This discussion on noise impacts should therefore be merged into the previous alternatives sections.*

*Last sentence: This determination (on effects not being significant) is not true. If construction activities occur during critical times of year (including breeding, rearing young, and wintering), impacts would be more acute because energy is spent fleeing from humans rather than on feeding and/or caring for young. During those times, effects would be significant (at least on the local population). Please acknowledge this, and revise the analysis accordingly.*

**UDWRe Response:**

**First sentence – The text has been clarified to remove the indication of a transmission line alternative.**

**Last sentence - It has been noted that there are some sensitive species that could potentially be affected; however, the nuisance levels at which they could be affected is not covered under this resource but it is not expected to be a significant impact.**

**BLM Comment 1672:**

*(Section 5.3.18.2.3.5, Page 5-821)*

***Last sentence:** Describe these impacts more ...HOW would wildlife be affected? Also need to point out that overall noise effects under this alternative would be SUBSTANTIALLY less than the LPP alignment alternatives since no pipeline and appurtenant facilities would be constructed.*

**UDWRe Response:**

**The text has been revised.**

**BLM Comment 1673:**

*(Section 5.3.18.2.3.6, Page 5-821)*

***NEW SUB-SECTION:** There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO noise effects under the No Action Alternative.*

**UDWRe Response:**

**The No Action Alternative sub-section has been added.**

**BLM Comment 1674:**

*(Section 5.3.18.3.1, Page 5-821)*

***1st paragraph, line 1:** The acronym “BMP” has already been defined in Chapter 5, so don’t do so again here.*

***1st paragraph, line 3:** Insert “and land management agencies” after “affected residents”.*

***1st paragraph, line 8:** Insert “and land management agencies” after “local residents”.*

***2nd paragraph, lines 5 and 6:** “Unsustained” should not be hyphenated.*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1675:**

*(Section 5.3.18.4.1, Page 5-822)*

***1st paragraph, line 11:** Should be “affect” (not “effect”).*

***2nd paragraph, line 11:** Should be “affect” (not “effect”).*

**UDWRe Response:**

**The suggested edits have been incorporated.**

**BLM Comment 1676:**

*(Section 5.3.18.2.3.5, Page 5-822)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO cumulative noise under the No Action Alternative.*

**UDWRe Response:**

**The No Action Alternative sub-section has been added.**

**BLM Comment 1677:**

*(Section 5.3.18.5.1, Page 5-823)*

**Line 2:** *Also address noise effects in remote areas used by the recreating public (not just effects on residences and businesses). Noise levels below human health concerns but still an annoyance should be analyzed (per ANSI S12.40-1990, cited on page 5-818).*

**UDWRe Response:**

**There would be some sound noticeable in recreation areas; however, this is not expected to be a significant impact especially considering how quickly the pipeline construction would be moving. Thus it was not analyzed further.**

**BLM Comment 1678:**

*(Section 5.3.18.5.4, Page 5-823)*

**Last sentence:** *Please describe why noise levels would exceed the significance threshold. Also need to point out that overall noise effects under this alternative would be SUBSTANTIALLY less than the LPP alignment alternatives since no pipeline and appurtenant facilities would be constructed.*

**UDWRe Response:**

**Text has been added to clarify.**

**BLM Comment 1679:**

*(Section 5.3.18.5.5, Page 5-823)*

**NEW SUB-SECTION:** *There needs to be a sub-section on analysis of impacts from the No Action Alternative (which is currently missing) – please add. Note that there would be NO unavoidable adverse effects to transportation infrastructure and service under the No Action Alternative.*

**UDWRe Response:**

**The No Action Alternative sub-section has been added.**

**BLM Comment 1680:**

(Section 5.3.18.6, Pages 5-823 through 5-825)

*Quite a few of the references listed here are not cited in the text. Please correct this.*

**UDWRe Response:**

**The references have been reviewed and revised in the text as appropriate.**

**BLM Comment 1681:**

(Section 5.3.19)

**General Comment:** *Could not find discussion of impacts on historic trails in this section. What will the effects of the construction of the pipeline, transmission line, associated access roads, etc. be on the Old Spanish National Historic Trail and other historic trails in the APE? The alignment of the Lake Powell pipeline generally follows the same route as the Old Spanish National Historic Trail, especially in the Cockscomb area, east of the Cockscomb, White Sage Flat, Johnson Run, and the area around Pipe Spring NM and the Kaibab Paiute Reservation.*

*Today most of this trail alignment retains its historic setting. What will the construction of a pipeline, transmission line, and a natural gas pipeline do to this historic resource?*

**UDWRe Response:**

**The text has been clarified.**

**BLM Comment 1682-1:**

(Section 5.3.19, Page 5-826)

*This whole section was lifted from the Class III study report. On September 12, 2014, BLM submitted many substantive comments regarding the Class III report. And to date, very few of those comments have been adequately addressed to BLM and the DOI agency's satisfaction. So here is a summary of those comments specific to the Class III study report:*  
*Main Report*

- 1. In the Executive Summary and elsewhere as appropriate, it is important to mention that the Class III report is also being used by the DOI agencies for Section 106 compliance on the decisions to issue right-of-way grants. DOI has separate requirements than FERC.*

**UDWRe Response:**

**All of the comments BLM submitted on September 12, 2014 have been addressed within Final Study Report 03 - Archeological and Historic-Era Resources. Resolution Tables were sent to BLM to show that all their comments had been addressed as of April 2015.**

**In the Executive Summary and other appropriate sections in the report it is mentioned that the Class III is also being used by the DOI agencies for Section 106 compliance on the decisions to issue right-of-way grants (Refer to page i, Executive Summary).**

**BLM Comment 1682-2:**

(Section 5.3.19, Page 5-826)

*Why is Section 1.6 titled “Identified Issues” and then no issues are described in this section? Section 1.6 briefly describes the APE, contractor involvement, and statutory authorities, but no discussion of identified issues.*

**UDWRe Response:**

**This section of Final Study Report 03 - Archeological and Historic-Era Resources has been revised (Refer to page 1-23, 1.5.2 Identified Issues).**

**BLM Comment 1682-3:**

*(Section 5.3.19, Page 5-826)*

*In Section 1.6, the FERC ILP is mentioned as reason for the Class III inventory and this report. It is DOI lands and a few state agencies that will sustain impacts from this undertaking. Please modify this language to reflect the undertaking as defined in 36 CFR 800.16(y) throughout the report and as appropriate in the appendices. Understand that the DOI agencies are using the Class III report to meet our Section 106 obligations, especially with regard to the identification and evaluation of historic properties (36 CFR 800.4 &5).*

**UDWRe Response:**

**The language was removed from Final Study Report 03 - Archeological and Historic-Era Resources when this section was revised (Refer to page 1-23, 1.5.2 Identified Issues & response to Comment 1682-1).**

**BLM Comment 1682-4:**

*(Section 5.3.19, Page 5-826)*

*Speaking of compliance with 36 CFR 800.4, in Section 1.6, the discussion on identification efforts and the APE is rather terse. Please describe how the scope of the identification efforts was determined. Who was consulted with? How was it decided that pedestrian survey was the only means necessary to identify historic properties in the APE? How was the APE defined? It is good to expand and describe the undertaking. Beyond the licenses and ROWs and other authorizations, a discussion of the types of ground disturbing activities that have the potential to affect historic properties is highly suggested. Please add a discussion that describes the types of vehicles, equipment, and machinery that may eventually be operating within the APE. If this is elaborated on elsewhere in an appendix, it could also be referenced here so that the reader is aware that the information is included in the report. It is important to spell these things out to the SHPOs – spoon feed them every detail.*

**UDWRe Response:**

**The description of the identification efforts and the APE has been expanded in the Class III report. The involved Tribes, Federal agencies, and state resource agencies all participated in the defining the APE. Chapter 3 of Exhibit E describes the type of vehicles and equipment that would operate within the APE, and this information has been included in the project description in the Class III report.**

**BLM Comment 1682-5:**

*(Section 5.3.19, Page 5-826)*



*Page 1-21 check the legislation on the Archaeological Historic Preservation Act. In addition, is it accurate to state that the file searches and Class III survey mark the first phases of compliance requirements for the federal legislation listed in the bulleted text? A class III simply satisfies the identification and evaluation stages of the Section 106 process described in 36 CFR 800. 4 and 5. Consider that Archaeological and Historic Preservation Act primarily provides for unanticipated discovery procedures, and for the prevention of avoiding unnecessary damage to archaeological resources by modification of project design or expedited data recovery. An Executive Order is not federal legislation. NAGPRA addresses the rights of lineal descendants and Indian tribes to human remains, funerary objects, sacred objects, and objects of cultural patrimony and requires federal agencies to determine affiliation and disposition of such items. NAGPRA is the sole responsibility of each land managing federal agency. This class III report does not provide for any sort of compliance with NAGPRA, but the NAGPRA Plan of Action will. ARPA for the most part is a permitting process for the excavation and removal of archaeological resources on public lands, and of course it provides for civil and criminal penalties. AIRFA is a policy statement that reminds Federal officials that American Indians enjoy the same constitutional guarantees under the First Amendment as do all other people. Under the Establishment Clause of the First Amendment American Indians have the same inherent right of freedom to believe, express, and exercise their traditional religions, which includes access to sacred sites on public lands. This class III report does not satisfy AIRFA. Compliance with AIRFA is better accomplished through government-to-government consultation. Suggest re- working this section of the report.*

**UDWRe Response:**

**Revisions have been made to this portion of Final Study Report 03 - Archeological and Historic-Era Resources (Refer to page 1-25, 1.5.3 Project Structure).**

**BLM Comment 1682-6:**

*(Section 5.3.19, Page 5-826)*

*Page 1-21 section 1.6, how does a cultural resources inventory comply with the NRHP? The NRHP is the Nation's official database of properties significant to our past, not a regulatory statute to comply with. Was it the intent to say that NRHP recommendations were made for historic properties in the APE?*

**UDWRe Response:**

**Revisions have been made to this portion of Final Study Report 03 - Archeological and Historic-Era Resources (Refer to page 1-25, 1.5.3 Project Structure).**

**BLM Comment 1682-7:**

*(Section 5.3.19, Page 5-826)*

*Section 2.2.1 Pipeline Route Alternatives is hard to follow. Suggest referencing a generalized map depicting the alternatives as they traverse the various landforms discussed in the text. While the authors are intimately familiar with the project and the terrain, not all readers of this report are as familiar. In addition, the logic of the sentence structure jumps all over. The first sentences of the first paragraph discuss two separate alternatives. Then the last sentence of the second paragraph discusses the terminus of two alignments, but with no clear connection between which alignment matches up to the alternatives discussed in the first paragraph.*



**UDWRe Response:**

**Appendix A: Project Maps have been referenced throughout this portion of Final Study Report 03 - Archeological and Historic-Era Resources.**

**BLM Comment 1682-8:**

*(Section 5.3.19, Page 5-826)*

*The 2.3 Precipitation could be more robust and organized differently. In a single paragraph precipitation is discussed, then there are a few sentences about water sources, then the paragraph ends with a single sentence discussing the distribution of cultural remains. Is the 15 inches of annual precipitation consistent through the entire length of the line? Is the distribution of water sources fairly consistent, or are they more prevalent in certain areas? What does this say about cultural resource distribution? We are left hanging with that “subsequent” last sentence.*

**UDWRe Response:**

**Revisions have been made to this portion of Final Study Report 03 - Archeological and Historic-Era Resources (Refer to page 2-2, 2.3 Precipitation).**

**BLM Comment 1682-9:**

*(Section 5.3.19, Page 5-826)*

*Section 2.4 and elsewhere as appropriate, please verify the Latin nomenclature (e.g. Artemisia bigelovii, Sarcobatus vermiculatus, Colegyne ramosissima). Genus and species are not normally conflated into a single large Latin term. At the very least it is unconventional.*

**UDWRe Response:**

**International Commission on Zoological Nomenclature (ICZN) and the International Code of Nomenclature for Algae, Fungi, and Plants (ICN) set the standards used to identify animals and plants. Both codes encourage the use of the genus and species for identification to lessen the chances of confusion and misidentification. For example, there are two genus Ficus. One is the genus name for fig trees and the other for molluscs. Using only the species name pumila would lead to confusion as it is a species of extinct lizards, a species of a fig tree, and a species of wildflower indigenous to the western US and northwestern Mexico. Thus, the study report lists both genus and species name for the first citation, after which it may be abbreviated from “Ficus pumila” to “F. pumila.”**

**BLM Comment 1682-10:**

*(Section 5.3.19, Page 5-826)*

*2-6, 2-7, are blank and what would be a footer labeled 2-8 is also blank. Are these intentional?*

**UDWRe Response:**

**Blank pages have been deleted from Final Study Report 03 - Archeological and Historic-Era Resources.**

**BLM Comment 1682-11:**

*(Section 5.3.19, Page 5-826)*

*Throughout Chapter 3, when presenting chronological ranges to the reader, the text frequently switches between a hyphen and an m-dash. Correctness is determined by the writing style – American Antiquity prefers m-dashes. Be consistent whichever is used.*

**UDWRe Response:**

**A search was done throughout the entire study report for dashes, en dashes, and em dashes to ensure they were being used in the appropriate way.**

**BLM Comment 1682-12:**

*(Section 5.3.19, Page 5-826)*

*Check sentence spacing last paragraph on 3-2 (between end punctuation and beginning of next sentence).*

**UDWRe Response:**

**This portion of Final Study Report 03 - Archeological and Historic-Era Resources has been revised (Refer to page 3-1, 3.2.1 Paleoindian).**

**BLM Comment 1682-13:**

*(Section 5.3.19, Page 5-826)*

*The Jenetski North Cave excavations (presented on p. 3-3) was also reported in 2012 Jenetski et al. American Antiquity 77(1), pp 125-159.*

**UDWRe Response:**

**This portion of Final Study Report 03 - Archeological and Historic-Era Resources has been revised (Refer to page 3-3, 3.2.1 Paleoindian).**

**BLM Comment 1682-14:**

*(Section 5.3.19, Page 5-826)*

*Check in-text citations for formatting e.g. (Gilbert et al.2008).*

**UDWRe Response:**

**A search was done for citations throughout the study report and any formatting mistakes within those citations were corrected.**

**BLM Comment 1682-15:**

*(Section 5.3.19, Page 5-826)*

*In 3.2.1.2 check spelling in first sentence first paragraph.*

**UDWRe Response:**

**This misspelling has been corrected in the study report (Refer to page 3-5, 3.2.1.2 Folsom Complex).**

**BLM Comment 1682-16:**

*(Section 5.3.19, Page 5-826)*

*On page 3-8, please list the Arizona site number correctly, AZ B:12:3 – not all numbers are ASM (there are others such as ASU, BLM, MNA, etc.) so it is important to make this distinction. If there is an institutional designation, please provide it. Please ensure that the five parts of a site designation for Arizona site numbers are used throughout the report and in appendices where appropriate (Another instance was noted on page 3-18). Information on AZ site numbering conventions can be found here:*

[http://www.statemuseum.arizona.edu/crservices/site\\_number\\_quad.shtml](http://www.statemuseum.arizona.edu/crservices/site_number_quad.shtml)

**UDWRe Response:**

**A search was done for Arizona site numbers throughout the study report and the appropriate site designations were added following the number.**

**BLM Comment 1682-17:**

*(Section 5.3.19, Page 5-826)*

*In section 3.2.2.2.1, verify spelling on hunters and gatherers (instead of gathers).*

**UDWRe Response:**

**The paragraph with this context was removed from the study report.**

**BLM Comment 1682-18:**

*(Section 5.3.19, Page 5-826)*

*Page 3-18 check space formatting in date ranges.*

**UDWRe Response:**

**A search was done for spacing issues throughout the study report and any mistakes were corrected.**

**BLM Comment 1682-19:**

*(Section 5.3.19, Page 5-826)*

*Page 3-20 check spelling on “Lake Archaic” – this slipped through spell checker software. Might want to do a “find and replace”.*

**UDWRe Response:**

**This misspelling has been corrected in the study report (Refer to page 3-22, 3.2.2.3 Late Archaic: 3000 to 1000 B.C.).**

**BLM Comment 1682-20:**

*(Section 5.3.19, Page 5-826)*

*Page 3-23, there is redundant punctuation (double periods closing out a sentence).*

**UDWRe Response:**

**A search was done for redundant punctuation throughout the study report and any that were found were corrected.**

**BLM Comment 1682-21:**

*(Section 5.3.19, Page 5-826)*

*Page 3-24, misspelling “Geib’a (1996a) – should be an “s”.*

**UDWRe Response:**

**This mistake has been corrected in the study report (Refer to page 3-27, 3.2.2.4.3 Taxonomies).**

**BLM Comment 1682-22:**

*(Section 5.3.19, Page 5-826)*

*Page 3-27, Section 3.2.2.4.5, second paragraph redundant beginning parentheses. See similar in 3.2.2.4.5 first paragraph another on page 3-30. Recommend verifying all of in-text citations throughout report and appendices as appropriate. There are also numerous formatting errors with in-text citations such as missing spaces (e.g. et al.2003 should be et al. 2003 with a space between the period and the year – see page 3-29 for instance).*

**UDWRe Response:**

**A search was done for redundant parentheses and in-text citation formatting errors throughout the study report and any that were found were corrected.**

**BLM Comment 1682-23:**

*(Section 5.3.19, Page 5-826)*

*Page 3-33 paragraph formatting – missing a space between paragraphs.*

**UDWRe Response:**

**A search was done for missing spaces between paragraphs throughout the study report and any that were found were corrected.**

**BLM Comment 1682-24:**

*(Section 5.3.19, Page 5-826)*

*Page 3-33 third paragraph, incorrect punctuation and odd direct quotes lead to an awkward statement.*

**UDWRe Response:**

**Revisions to this paragraph in the study report have been made (Refer to page 3-37, 3.2.2.4.9 Bow and Arrow Technology).**

**BLM Comment 1682-25:**

*(Section 5.3.19, Page 5-826)*

*All throughout this document there are multiple instances where periods are used incorrectly when closing out a sentence with a quote (e.g. ...territories.”. on page 3-33). Two periods are not needed in this sentence – ever. Based on the number of occurrences, it is apparent that this is systemic and not an isolated mistake. Recommend this is fixed throughout the document and in appendices where appropriate.*

**UDWRe Response:**

**A search was done for the incorrect use of periods throughout the study report and any that were found were corrected.**

**BLM Comment 1682-26:**

*(Section 5.3.19, Page 5-826)*

*Missing a parenthesis first sentence second paragraph page 3-34.*

**UDWRe Response:**

**A search was done for missing parentheses throughout the study report and any that were found were corrected.**

**BLM Comment 1682-27:**

*(Section 5.3.19, Page 5-826)*

*Page 3-50: Do not forget to update the in-text citations where place holders are inserted (for example McFadden 2012:xx). Also, note that on the references cited section there are place holders for reference names.*

**UDWRe Response:**

**The McFadden citation is correct. The “xx” is a page number, part of a long introduction.**

**A search was done for citation place holders throughout the study report and any that were found were corrected.**

**BLM Comment 1682-28:**

*(Section 5.3.19, Page 5-826)*

*3-48: The discussion on Unit Pueblos could be expanded. They are more interesting and significant than simply L-shaped masonry. Unit Pueblos, also referred to as Prudden Units, implies an occupational site that contains a triad of features within the same archaeological context: contiguous roomblock, a kiva, and a midden.*

**UDWRe Response:**

**The discussion on the Unit Pueblos has been expanded in the study report (Refer to page 3-54, 3.2.3.1.3.2 LPP Perspective).**

**BLM Comment 1682-29:**

*(Section 5.3.19, Page 5-826)*

*In the section 3.2.3.1.5.2 discussion on Parowan Fremont, check spelling. “There was considerable socioeconomic interaction between...”.*

**UDWRe Response:**

**This portion of the study report has been revised and the misspelling has been corrected (Refer to page 3-51, 3.2.3.1.3 Pueblo II: A.D. 900 - 1150).**

**BLM Comment 1682-30:**

*(Section 5.3.19, Page 5-826)*

*Another instance of space formatting with in-text citation can be found 3-57 fifth paragraph [(1979:720) rejected]..*

**UDWRe Response:**

**A search was done for in-text citation formatting errors throughout the study report and any that were found were corrected.**

**BLM Comment 1682-31:**

*(Section 5.3.19, Page 5-826)*

*Page 3-67 incorrect paragraph spacing near top of page.*

**UDWRe Response:**

**The spacing between the paragraphs has been corrected in the study report (Refer to page 3-75, 3.3.1.1 Jedediah S. Smith (1826 to 1827)).**

**BLM Comment 1682-32:**

*(Section 5.3.19, Page 5-826)*

*Page 3-69 – there is an odd floating period in between two paragraphs.*

**UDWRe Response:**

The floating period between two paragraphs has been removed from the study report (Refer to page 3-76, 3.3.1.2 The “Old Spanish Trail” (1829 to 1848)).

**BLM Comment 1682-33:**

*(Section 5.3.19, Page 5-826)*

*Page 3-78, The choice not to discuss the Mountain Meadows Massacre is interesting. Why? History is not always pretty.*

**UDWRe Response:**

There is no doubt that the Meadow Mountain Massacre was and still is a sensitive issue to the residents and Native Americans of the area. The Paiute Indian Tribe of Utah objected to the well-established historical accounts of the Native American involvement in the opening events that led to the Meadow Mountain Massacre by local inhabitants of the area. They requested a revision of historical events that was not acceptable. Thus, the history was removed from the report to eliminate unnecessary contention, as the issue was unlikely to be resolved to everyone’s satisfaction.

**BLM Comment 1682-34:**

*(Section 5.3.19, Page 5-826)*

*Page 3-79, second paragraph misspelled St. George.*

**UDWRe Response:**

This misspelling has been corrected in the study report (Refer to page 3-88, 3.3.4.1.1 Settlement Period (1851 to 1869)).

**BLM Comment 1682-35:**

*(Section 5.3.19, Page 5-826)*

*Page 3-84 – There is a “hanging paragraph” that does not appear to be related to the previous text on page 3-82. Perhaps the beginning of this text is a formatting error and is obscured by the historic photographs presented on page 3-83. Along these lines, if the organization of these sections is driven by the division of southwestern Utah history into five periods (Settlement; Agricultural Development and Political Turmoil; Community and Institutional Development; Great Depression and Recovery; and Post War, then why the sudden inclusion of Gould’s Sheep Shearing Mill? Where is the heading for the Great Depression and Recovery period?*

**UDWRe Response:**

A portion of this section in the study report was accidentally removed but it has been re-inserted (Refer to page 3-91, 3.3.4.1.4 Gould’s Sheep Shearing Mill (1910 to ca. 1940) to page 3-94, 3.3.4.1.5 Great Depression and Recovery Period (1929 to 1945)).

**BLM Comment 1682-36:**

*(Section 5.3.19, Page 5-826)*



*What is the connection between census-bureau statistics and historic context presented in section 3.3.4.1.5 Post War Period? While it may be true that the area experienced tremendous population growth, nothing is said regarding demographics or human social distribution of the area. What accounted for such unprecedented population growth? Was it immigrants to the area? Was it a natural population boom of the existing residents? Is the growth entirely attributed to part-time “snow birds” as suggested?*

**UDWRe Response:**

**Revisions to this portion of the study report have been made (Refer to page 3-94, 3.3.4.1.6 Post War Period (1946 to Present)).**

**BLM Comment 1682-37:**

*(Section 5.3.19, Page 5-826)*

*The Arizona Strip map presented in Figure 3-11 is poor. Maps should be graphic representations of geographic features discussed in the text. So for instance, in the text presented on page 3-88, it mentions the KPIR, SR 389, Colorado City, Fredonia, and the proposed pipeline corridor. For a map to be beneficial to the reader, it would be nice to see these named features geographically displayed. Also, why the sudden choice to include a digital elevation model?*

**UDWRe Response:**

**This map has been revised in the study report (Refer to page 3-101, Figure 3-10 The Arizona Strip).**

**BLM Comment 1682-38:**

*(Section 5.3.19, Page 5-826)*

*Remove unnecessary blank pages 3-91 and 3-92.*

**UDWRe Response:**

**The blank pages have been deleted from the study report.**

**BLM Comment 1682-39:**

*(Section 5.3.19, Page 5-826)*

*Page 4-1, first paragraph. A class III survey report should be a stand-alone document. A consistent critique of this report is its constant references to the FERC ILP, such as Study Plan 3. SHPOs and other readers have no knowledge of this plan, so referencing it is meaningless. The pronoun reference to “standard administrative and field tasks” covered in more detail in the regulatory requirements of federal agencies is meaningless and misleading. Not sure what this introductory paragraph is trying to say.*

**UDWRe Response:**

**Revisions to this portion of the study report have been made (Refer to page 4-1, 4.1 General).**

**BLM Comment 1682-40:**

*(Section 5.3.19, Page 5-826)*

*The use of the term “standard”, as in “standard site categories and types used is problematic. There really are no “standard site categories” unless referring to guidance provided by ASM or Utah. In a class III report, absolutely everything should be described in detail -- not generalized or standardized.*

**UDWRe Response:**

**“Standard site categories” has been removed from this section of the study report (Refer to page 4-1, 4.1 General).**

**BLM Comment 1682-41:**

*(Section 5.3.19, Page 5-826)*

*On page 4-1, how was the challenge overcome of merging hard copy and digital information into a series of useable maps and tables? Did this affect the results in any way? Are there any data gaps as a result of this challenge? A “challenge” represents a red flag watch out situation to land managers and other reviewers, please elaborate and explain.*

**UDWRe Response:**

**Revisions to this portion of the study report have been made (Refer to page 4-1, 4.2 Introduction: The Lake Powell Pipeline Literature Search).**

**BLM Comment 1682-42:**

*(Section 5.3.19, Page 5-826)*

*Table 4-1 formatting error (cells are cutting off text).*

**UDWRe Response:**

**All the tables throughout the study report were edited for formatting issues.**

**BLM Comment 1682-43:**

*(Section 5.3.19, Page 5-826)*

*Table 4-2 formatting error (cells are cutting off text).*

**UDWRe Response:**

**All the tables throughout the study report were edited for formatting issues.**

**BLM Comment 1682-44:**

*(Section 5.3.19, Page 5-826)*

*Page 4-6 formatting error (missing space separation between paragraphs).*

**UDWRe Response:**

**A space was added between these paragraphs in the study report (Refer to page 4-6, 4.2.2 Arizona Record Search Overview).**

**BLM Comment 1682-45:**

*(Section 5.3.19, Page 5-826)*

*Page 4-6, which Certified Local Government housing surveys were reviewed?*

**UDWRe Response:**

**This portion of the study report has been revised (Refer to page 4-8, 4.2.2 Arizona Record Search Overview).**

**BLM Comment 1682-46:**

*(Section 5.3.19, Page 5-826)*

*Page 4-6 spelling error – should be “Cline Special Collections”.*

**UDWRe Response:**

**This misspelling has been corrected in the study report (see page 4-8, 4.2.2 Arizona Record Search Overview).**

**BLM Comment 1682-47:**

*(Section 5.3.19, Page 5-826)*

*Page 4-7 introductory paragraph suggests that site typology will encompass, among other things, prehistoric villages. Where is this in table 4-3?*

**UDWRe Response:**

**This portion of the study report has been revised (Refer to page 4-9, 4.3 Defining Prehistoric and Historic Archaeological Site Types).**

**BLM Comment 1682-48:**

*(Section 5.3.19, Page 5-826)*

*Table 4-3, prehistoric site definitions do not seem to account for agricultural sites such as field houses, which would not fit into the habitation definition in that they most likely will not exhibit extensive occupation with substantial architecture.*

**UDWRe Response:**

**Table 4-3 Definitions of Prehistoric Site Types has been revised in the study report (Refer to page 4-10, 4.3 Defining Prehistoric and Historic Archaeological Site Types).**

**BLM Comment 1682-49:**

*(Section 5.3.19, Page 5-826)*

*Regarding site typology, suggest providing the reader with an explanation of how the list was derived. Is it based on a particular researcher's typology? Is it unique to the project area? The typology seems to be missing quite a few site types that are commonly used in archaeological research, so some explication is warranted. A lot of archaeologists in Arizona and New Mexico subscribe to Plog's typology, which captures just about every known type of site present in the American Southwest (Plog 1974 *The Study of Prehistoric Change*, Academic Press, New York). Either way, there is not anything wrong with the typology, it just that needs to be explained to the reader how it was developed and why it is appropriate for the LPP study area.*

**UDWRe Response:**

**This portion of the study report has been revised (Refer to page 4-9, 4.3 Defining Prehistoric and Historic Archaeological Site Types).**

**BLM Comment 1682-50:**

*(Section 5.3.19, Page 5-826)*

*The Section 4.4 NRHP introductory paragraph is convoluted. Suggest a more simple approach. A contractor makes recommendations – and that is it. The only time it is necessary to use the “D” word is if a previously recorded site has already been “determined” eligible. If there is SHPO concurrence on a particular agency determination, then it is conventional to cite the report and date. Land managing agencies are particular about these distinctions because these sites are managed in perpetuity and these designations profoundly affect the land managing decisions.*

**UDWRe Response:**

**This section has been removed from the study report.**

**BLM Comment 1682-51:**

*(Section 5.3.19, Page 5-826)*

*Page 4-12, the discussion on sampling is terse. What is meant that for large and/or dense sites sample inventories were taken? Was this an attempt to quantify artifact density? Sampling is a pet peeve of the AZ SHPO and this will generate comments. Please elaborate on the method and decision making process used. For example, explain the rationale on the decision on whether to install a 1-m versus a 5-m sampling square. Explain the rationale for where within a site a sampling square was in place. It needs to be clear that the method used accomplished the following key components of a sampling strategy: 1) captures the range and diversity of material remains present at the site; and 2) captures the spatial distribution of material remains at the site in relation to overall site size.*

**UDWRe Response:**

**Revisions to this portion of the study report have been made (Refer to page 4-17, 4.4.2 Archaeological Site Recordation).**

**BLM Comment 1682-52:**

*(Section 5.3.19, Page 5-826)*

*GENERAL COMMENT / REQUEST: Somewhere in this report, possibly in the Methods section, the 30 miles of APE located on private lands that are not surveyed need to be addressed. This information needs to be transparent and forthright and so that it can be dealt with it in the future. Recommend including the following information: 1) A discussion describing the location(s) of the private lands not yet surveyed (include maps depicting these segments); 2) Number of private entities not granting access (For instance, can the problem be attributed to a few individuals owning large tracts of lands, or are will there be potentially multiple dozens of private land owners to deal with. Identifying them by name is not necessary, just Private land owner 1 has 1.60 mile segment, owner 2 has .3 mile segment, etc.); 3) A synopsis of the effort exerted to gain access for archaeological survey and why access was denied; 4) Were all private land owners approached? (i.e., show that it was not because of lack of effort that the lands were not surveyed); 5) A discussion on the potential / expected archaeological site density on the private lands. If access was granted, how significant are the sites we would likely encounter on these lands?*

*FERC and others at the State seem to not be concerned with these unsurveyed lands. Both SHPOs and the ACHP have indicated that they are very interested in this data gap. That is why it should just simply be acknowledged in the report, described in detail as much as is known and move on. BLM requests to everyone associated with this project to begin taking this seriously and developing a strategy on how to deal with the problem. Of the many risks associated with this project, this one presents a high probability of appeal or litigation from NGOs and tribes. Appeal and litigation will delay bringing Section 106 to a close. And, the DOI agencies will not be able to make their Record of Decisions to issue rights-of- ways if Section 106 is not completed.*

**UDWRe Response:**

**A discussion on the un-surveyed private lands has been added to the study report and maps have been added as an Appendix (Refer to page 5-120, 5.5 Un-surveyed Lands and Appendix L: Interpolation Maps).**

**BLM Comment 1682-53:**

*(Section 5.3.19, Page 5-826)*

*In Section 5.2 on page 5-3, since this is a linear project, suggest including the number of miles the line crosses each jurisdiction (i.e. how many miles cross NPS, BLM, SITLA, private, etc.).*

**UDWRe Response:**

**Jurisdiction Summary tables are located in Chapter 1 of the study report (Refer to page 1-24, 1.5.3 Project Structure).**

**BLM Comment 1682-54:**

*(Section 5.3.19, Page 5-826)*

*Table 5-4, misspelling of the word “Prehistoric” in the table header.*

**UDWRe Response:**

**This misspelling has been corrected in the study report (Refer to page 5-60, Table 5-4 Summary of Prehistoric Sites by Type).**

**BLM Comment 1682-55:**

(Section 5.3.19, Page 5-826)

*In addition to the updated IMACS form, suggest including in the report a discussion on the previously recorded sites not relocated. Not relocating previously recorded sites is another one of those red flag watch out situations with the SHPOs. SHPO will want to know: 1) what sort of effort was exerted in the field to relocate a site; and 2) some sort of explanation as to why the site was not relocated (e.g. the site's alleged location is in an area with abundant loosely consolidated aeolian deposits and may have been reburied since its original recording in 1998).*

**UDWRe Response:**

**Discussions on the sites not relocated have been added to the study report (Refer to page 4-17, 4.4.2.1 Utah, page 4-18, 4.4.2.2 Arizona, page 5-2, 5.2 Utah Results and Recommendations and page 5-70, 5.3 Arizona Results and Recommendations).**

**BLM Comment 1682-56:**

(Section 5.3.19, Page 5-826)

*Table 5-2, formatting error (occasionally text is cut off by cell – perform a wrap text function in these cells). There are also spacing issues and other grammatical and spelling errors within this extensive table. Please edit and fix thoroughly.*

**UDWRe Response:**

**All the tables throughout the study report were edited for formatting issues.**

**BLM Comment 1682-57:**

(Section 5.3.19, Page 5-826)

*Table 5-2, similar to comment 50 above, BLM requests that the eligibility column be presented in terms of contractor recommendation only. Agency determinations and SHPO concurrence should have reports and dates (a separate column in the spreadsheet). Not only do the federal agencies require this, but SHPOs will inquire as existing determination status as well. AZ SHPO for instance, purges their records to ASM every seven years, so determinations older than this will pique their interest if NRHP determination status is vague or unclear.*

**UDWRe Response:**

**Sagebrush Consultants' recommendation is the only recommendation presented in the eligibility column of Table 5-2 in the study report.**

**BLM Comment 1682-58:**

(Section 5.3.19, Page 5-826)

*Since site condition is so intimately tied to NRHP eligibility, BLM requests some sort of explanation of the condition categories (poor, fair, good etc.). How do these categories relate to “integrity” in terms of National Register Bulletin 15? For instance, some site conditions are rated as poor, yet still recommended eligible. In these instances, could a single massive rain*

*event cause the site to be considered Not Eligible? Or conversely, is a poor site condition possibly the reason a property is recommended as Not Eligible?*

**UDWRe Response:**

**The integrity discussion has been enhanced in the study report (Refer to page 5-4, 5.2.1 Significance Recommendations).**

**BLM Comment 1682-59:**

*(Section 5.3.19, Page 5-826)*

*Page 5-38, space formatting error between “16” and “habitation”.*

**UDWRe Response:**

**A search was done for spacing issues throughout the study report and any that were found were corrected.**

**BLM Comment 1682-60:**

*(Section 5.3.19, Page 5-826)*

*It is difficult to keep track of the number of Utah sites presented in this report textually and elsewhere in tabular format. So on page 5-3, it states that the survey located 329 sites in Utah, 110 were previously recorded and updated for this project. An additional 12 from the literature review were not relocated. Table 5-4 states that there are 280 prehistoric sites. Section 5.2.4 and table 5-5 state that there are 71 historic component (13 are multi-component). Arriving at 329 total Utah sites is difficult with the numbers presented in this report. It could be due to lack of familiarity with the survey, but if BLM is having trouble following the math, so will SHPO and others. Prehistoric sites + historic sites + multicomponent sites (should) = 329, because that is what is stated on page 5-3. But this is not the case. Please make these discussions more clear and easy to follow.*

**UDWRe Response:**

**All site statistics in the study report have been updated and any confusing text has been revised to be clearer.**

**BLM Comment 1682-61:**

*(Section 5.3.19, Page 5-826)*

*Similar to comment 59 above, the sites do not seem to add up in the text (or at the very least the text presenting these discussions is hard to follow and arrive at the appropriate number). For instance, there are 71 historic sites in Utah, of which 13 are multi component. Page 5-43 in section 5.2.4.2 Area 1 describes 15 historic sites. Page 5-44 in Sections 5.2.4.3-5 (Areas 2 – 4) it is unclear exactly how many sites are being discussed because the paragraph is not organized the same as the other Area discussions. But it looks like 6 roads, two trash dumps, two livestock areas, and a homestead, so 11? Area 3 states there are 17 historic Utah sites, and Area 4 has 18. The totals of the bold figures discussed in these sections equals 61. Keeping track of sites within a class III report is critical. Everything has to add up in every instance of the report, whether*



*presented textually, in tabular format, or graphically displayed on maps. There cannot be discrepancies in the data.*

**UDWRe Response:**

**All site statistics in the study report have been updated and any confusing text has been revised to be clearer.**

**BLM Comment 1682-62:**

*(Section 5.3.19, Page 5-826)*

*Page 5-44 Section 5.2.4.3 Area 2 is missing a comma in the list of site types presented.*

**UDWRe Response:**

**The missing comma has been added to this section of the study report (Refer to page 5-60, 5.2.3.2 Area 2).**

**BLM Comment 1682-63:**

*(Section 5.3.19, Page 5-826)*

*Page 5-45 and 5-46. Rock art sites may also be eligible under Criterion A, and routinely are determined eligible as such here in Arizona. The event being tribal migrations and graphic representations of origin stories which clearly qualify as events.*

**UDWRe Response:**

**A discussion on the eligibility of rock art has been added to the study report (Refer to page 5-69, 5.2.6 Eligibility Recommendation Discussion).**

**BLM Comment 1682-64:**

*(Section 5.3.19, Page 5-826)*

*The bulleted list presenting the specific breakdown by NRHP criteria on page 5-46 adds up to 239 sites, not 235 as it states in the text.*

**UDWRe Response:**

**All project statistics were updated and any confusing text was revised to be clearer.**

**BLM Comment 1682-65:**

*(Section 5.3.19, Page 5-826)*

*Based on the fact that there appears to be discrepancies maintaining accurate site totals. Table 5-2 was spot checked beginning on page 5-5 and ending on 5-27. Only 46 sites were listed as "historic" in the category column when there should be 71 (even if 13 multicomponent sites are added to this total the numbers do not add up). Obviously this is a huge problem, as now it calls in to question exactly what the totals are supposed to be. All of the tables and text from the body of the report need to be cross-referenced with the site cards to verify for accuracy.*

**UDWRe Response:**

**All project statistics were updated and any confusing text was revised to be clearer.**

**BLM Comment 1682-66:**

*(Section 5.3.19, Page 5-826)*

*Page 5-46, again similar to above comment regarding Utah, BLM recommends detailing how many miles of the pipeline cross each jurisdiction within Arizona.*

**UDWRe Response:**

**Jurisdiction Summary tables are located in Chapter 1 of the study report (Refer to page 1-24, 1.5.3 Project Structure).**

**BLM Comment 1682-67:**

*(Section 5.3.19, Page 5-826)*

*Page 5-47, Table 5-6, 23 sites is a high number of sites to not relocate. Similar to the comment above, it is important to describe the level of effort exerted to relocate them, and offer some explanation as to why they were not found. BLM just recently dealt with this issue for a land exchange, so there will be some sort of SHPO response regarding these sites. The better the argument and the more detail provided, the easier it will be. FYI- this situation with the aforementioned land exchange resulted in additional fieldwork because the archaeological contractor could not sufficiently document their position.*

**UDWRe Response:**

**Discussions on the sites not relocated have been added to the study report (Refer to page 4-17, 4.4.2.1 Utah, page 4-18, 4.4.2.2 Arizona, page 5-2, 5.2 Utah Results and Recommendations and page 5-70, 5.3 Arizona Results and Recommendations).**

**BLM Comment 1682-68:**

*(Section 5.3.19, Page 5-826)*

*Table 5-7 formatting errors (cells cut off text, spacing and spelling errors). Please fix all of these formatting errors in this and all tables in the final version to be submitted to SHPO.*

**UDWRe Response:**

**All the tables in the study report have been edited for formatting issues like this.**

**BLM Comment 1682-69:**

*(Section 5.3.19, Page 5-826)*

*It is assumed that all of the IOs in Table 5-8 are recommended not eligible for the NRHP. In a few rare circumstances, IO's technically can be eligible. Please add a discussion on this. Arizona SHPO will ask about this.*

**UDWRe Response:**

**This section of the study report has been revised (Refer to page 5-94, 5.3.1 Isolated Occurrences).**

**BLM Comment 1682-70:**

*(Section 5.3.19, Page 5-826)*

*Page 5-68, since the map depicting the Area subdivisions and their associated discussions are presented some 66 pages previously, it might be appropriate to remind the reader that the Arizona portion of the pipeline does not pass through Area 4.*

**UDWRe Response:**

**A reminder was add to the study report (Refer to page 5-107, 5.3.2.4 Area 4).**

**BLM Comment 1682-71:**

*(Section 5.3.19, Page 5-826)*

*Page 5-70 last paragraph (first paragraph in Section 5.3.3.3, check the word choice regarding the transition of terrain from slopes and mountains to the valley floor; the sentence is confusing.*

**UDWRe Response:**

**This section of the study report was revised and made clearer (Refer to page 5-108, 5.3.3.3 Area 2).**

**BLM Comment 1682-72:**

*(Section 5.3.19, Page 5-826)*

*Page 5-71, Section 5.3.4 first introductory paragraph, shouldn't it be 85 sites recommended Eligible, and 1 listed (Honeymoon Trail) on the NRHP?*

**UDWRe Response:**

**The Honeymoon Trail is not on the NRHP.**

**BLM Comment 1682-73:**

*(Section 5.3.19, Page 5-826)*

*Page 5-71 Section 5.3.5, first paragraph. Awkward sentence and word use (wrong use of “too” as a synonym should be the preposition “to”).*

**UDWRe Response:**

**Revisions were made to this section of the study report and this mistake has been resolved (Refer to page 5-109, 5.3.5 Isolated Occurrences Discussion).**

**BLM Comment 1682-74:**

*(Section 5.3.19, Page 5-826)*

*Please elaborate on IO027 and IO087. They are called out as requiring further discussion, yet the discussion does not present much information. What exactly is the text trying to say here, are these IOs more significant than simply Isolated Occurrences, or why should there be further discussion? This paragraph piques the reader's interest but leaves us wanting more.*

**UDWRe Response:**

**Revisions have been made to this section of the study report (Refer to page 5-109, 5.3.5 Isolated Occurrences Discussion).**

**BLM Comment 1682-75:**

*(Section 5.3.19, Page 5-826)*

*With regards to Section 5.4, it is understood that this is sensitive information with limited distribution. However, the information presented is not very substantial. Please elaborate on what the Zuni say if possible and why. Exactly what are we talking about in terms of laws and regulations. Are these sites that they consider eligible? Are they TCPs under the guidance of NRB 38? Are they connected to oral traditions or integral to maintaining modern cultural identity? Similar to how information was presented on the Hopi in the following paragraphs.*

**UDWRe Response:**

**A substantial amount of information regarding the ethnographic reports conducted was added to this section of the study report (Refer to page 5-110, 5.4 Ethnographic Report Contributions to Eligibility).**

**BLM Comment 1682-76:**

*(Section 5.3.19, Page 5-826)*

*Page 5-72 last run-on sentence in the last paragraph discussing petroglyphs and pictographs is very hard to follow.*

**UDWRe Response:**

**The “run-on” sentence has been removed and this section has been completely revised (Refer to page 5-110, 5.4 Ethnographic Report Contributions to Eligibility).**

**BLM Comment 1682-77:**

*(Section 5.3.19, Page 5-826)*

*Extra blank pages inserted for no reason at 5-75, and the following unnumbered page after that.*

**UDWRe Response:**

**The blank pages have been deleted.**

**BLM Comment 1682-78:**

*(Section 5.3.19, Page 5-826)*

*Page 6-1 Section 6.2.1, please elaborate on direct impacts. Do not refer the reader to an HPMP that has not even been written yet, especially given that every agency except FERC will not be referencing the HPMP (BLM will be requesting an HPTP to accommodate the PA). Provide the reader with a brief understanding of exactly what will happen out on the ground. Again, as mentioned in another earlier comment – spoon feed the reader detail and information. Do not assume that everyone understands the exact nature of a construction project. Although the reader is referenced to Chapter 1, that chapter does not provide the detail suggested. What type of equipment will be out there: D6 bulldozers, or larger? Backhoes? Earthmovers? Cranes? Water tenders? How deep is the pipeline? How wide is the pipeline disturbance? Describe a lay down yard, will the surface of a lay down yard need to be bladed? How big is a typical lay down yard – an acre, two acres? How big is typical staging area? What type of transmission line – how big are the tower pads? What type of disturbance is required to install a tower? Will pull yards be needed? Or fly yards? Will areas need to be cleared for parking, foreman buildings, and portable toilet facilities? Will there be any hazardous chemicals or materials involved? Hazardous chemicals or materials may adversely affect traditional cultural plant gathering areas. Fires have been fought where fire retardant was a concern for this very reason, so it is a legitimate comment. Even if some of these details have not been refined and micro-sited, they can speak to the ultimate range of potential ground disturbing activities in this class III report.*

**UDWRe Response:**

**Need input from MWH on construction issues.**

**Impacts and effects are a NEPA issue, not Section 106.**

**BLM Comment 1682-79:**

*(Section 5.3.19, Page 5-826)*

*Page 6-1, on the discussion regarding indirect impacts, include a brief discussion on how these may be only temporary in nature (Brian had indicated that a majority of the access road for instance, will be reclaimed reducing the likelihood of future human access).*

**UDWRe Response:**

**Need input from MWH on construction issues.**

**Impacts and effects are a NEPA issue, not Section 106.**

**BLM Comment 1682-80:**

*(Section 5.3.19, Page 5-826)*

*Page 6-2, Section 6.3, please re-read the first introductory paragraph. The second sentence discussing the environment is hard to follow. What is meant by “...have the potential to affect the environment and a number of them the environment within the area of the LPP...”?*

**UDWRe Response:**

**This section of the study report has been revised and made clearer (Refer to page 6-5, 6.5 Analysis of LPP Site Impacts).**

**BLM Comment 1682-81:**

*(Section 5.3.19, Page 5-826)*

*As stated on Page 6-2, Section 6.3, which “select number” of other projects have the potential to directly affect archaeological sites within and near the proposed LPP? Are there overlapping APEs with the LPP APE? If so which one’s? Please elaborate. What is the current status of those projects? Planning stage? Construction stage? Will historic properties already be impacted (destroyed) by the time the LPP is constructed? Again, do not refer the reader to an HPMP. A class III report should be a stand-alone document. SHPOs and land managers should not need to go pull other reports and documentation in order to understand the content of a class III report.*

**UDWRe Response:**

**A discussion was added to this section of the study report regarding the “select number” of other projects and their impact on the LPP project (Refer to page 6-5, 6.5 Analysis of LPP Site Impacts).**

**BLM Comment 1682-82:**

*(Section 5.3.19, Page 5-826)*

*What is the purpose of section 6.4 and 6.5? There is already a lengthy discussion of prehistoric and historical context in Chapter 3.*

**UDWRe Response:**

**These sections of the study report have been removed.**

**BLM Comment 1682-83:**

*(Section 5.3.19, Page 5-826)*

*Section 6.5.1 on page 6-4, see comment 78 above. Somewhere in this report please provide this level of detail. It is meaningless to state that “some tower locations will directly impact a limited number of sites”. Land managers, SHPOs, tribes, and NGOs are well aware that this project will impact sites and other resources. These discussions should be framed in terms of how direct effects will impact sites. For instance, 36 CFR 800.5(a)(1) defines an adverse effect as when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. See comment 81 above regarding cumulative impacts. Discussion of impacts can be framed in this context – micro-sited 90% engineering plans are not needed to have this discussion. The ground disturbing activities associated with the LPP have the potential to crush and displace artifacts, destroy structures and features, alter archaeological context resulting in irretrievable and irreplaceable information loss.*

**UDWRe Response:**

**Impacts and effects are a NEPA issue, not Section 106. The HPMP will address these issues, but only after BLM has determined which sites are eligible and which are not.**

**BLM Comment 1682-84:**

*(Section 5.3.19, Page 5-826)*

*All of the impact tables are good and useful.*

**UDWRe Response:**

**No response is needed.**

**BLM Comment 1682-85:**

*(Section 5.3.19, Page 5-826)*

*Do not forget to complete the references section for the final to be submitted to SHPO.*

*Appendix A*

**UDWRe Response:**

**The references within the study report were double checked against the References Cited and then the References Cited was double checked against the references within the report.**

**BLM Comment 1682-86:**

*(Section 5.3.19, Page 5-826)*

*Project maps are nice, very professional. Appendix A.*

**UDWRe Response:**

**No response is needed.**

**BLM Comment 1682-87:**

*(Section 5.3.19, Page 5-826)*

*Page F-1 the “T” in the word “This” is bold font. Appendix F.*

**UDWRe Response:**

**The correction has been made to Appendix F (now Appendix E) of the study report (Refer to page E-1).**

**BLM Comment 1682-88:**

*(Section 5.3.19, Page 5-826)*

*Page G.3 Part 1 header, spacing error. Appendix G.*

**UDWRe Response:**



**This spacing error has been corrected in Appendix G (now Appendix F) of the study report (Refer to page F-3).**

**BLM Comment 1682-89:**

*(Section 5.3.19, Page 5-826)*

*ASM Site Records*

*AZ A:4:085 (ASM). How can an artifact scatter with no visible features or structures maintain integrity of design, workmanship, and feeling? Technically one could argue “workmanship” with respect to flint knapping skill of the 4 projectile point fragments. Design results from the conscious decisions made during the original conception and planning of a property. It can include elements such as organization of space. So if there is a conscious pattern or use of space in the artifacts at this site that speak to the integrity of design, then elaborate on that aspect. In the second paragraph it says that the site maintains integrity of association, yet in the very next paragraph it says that the site cannot be associated with an important event or person. According to NRB 15, the very definition of “association” is the direct link between an important historic event or person and a historic property (see NRB 15 page 45).*

**UDWRe Response:**

**The integrity of site has been re-evaluated and revised if necessary.**

**BLM Comment 1682-90:**

*(Section 5.3.19, Page 5-826)*

*General Comment on NRHP eligibility recommendations. Avoid terse statements or the appearance of canned language, such as “This site is eligible under criterion D for its ability to yield information about prehistoric resource procurement.” Develop the argument further for an eligible recommendation under criterion D. The potential for subsurface archaeological remains is not enough. Sites eligible under criterion D are likely to contain information bearing on an important archaeological research question. In addition, the information that a property yields must be evaluated within an appropriate historic context – of which a masterful example is presented in Chapter 3 of the main report – so all site eligibilities should be tied back to this context that was established. This by the way will become even more useful when developing our Historic Properties Treatment Plan and FERC’s HPMP. At the very least an example of a NRHP eligibility recommendation might look like “Sagebrush Consultants, Inc. recommends that site X be considered eligible for inclusion in the NRHP under criterion D for its ability to yield important information regarding the Numic expansion into the St. George Basin during the Formative Period.” In that example a theme was established, a geographic location, and temporal period in which a site can contribute valuable information. Recommendations can be further with statements such as “The site contains ceramic type X and we expect to be able to document the local evaluation of the type or its intrusive nature. Furthermore, the hearths have the potential to contain datable carbon deposits and are / are not associated with more than one occupation.” In similar fashion, Not Eligible recommendations require even more in-depth arguments to pass SHPO muster. Weak argument: “Site X is in poor condition because of water erosion and is therefore recommended Not Eligible for inclusion in the NRHP”. Strong(er) argument: “Site X no longer retains integrity of location because it has suffered from extreme sheet wash erosion which has re-deposited the artifacts into a secondary context. The petroglyph, located on the east side of the site, has been obscured with modern graffiti to the extent that the design of the element is no longer apparent. In addition, feature 3 has been subjected to severe*

*Bioturbation from Kangaroo Rats diminishing the feature's ability to produce a reliable chronometric sample. Based on these factors, Sagebrush Consultants Inc. recommends that this site be considered Not Eligible for inclusion in the NRHP." Granted these are kind of corny examples but they illustrate the point that arguments need to be fully developed. NRHP evaluation is probably the most important aspect of a class III report. If SHPOs suspect canned language or the appearance of lack of site-specific evaluation, they will comment and ask us to improve our NRHP evaluations.*

**UDWRe Response:**

**All site forms were reviewed and revised to remove terse statements or canned language and to have stronger NRHP eligibility discussions.**

**BLM Comment 1682-91:**

*(Section 5.3.19, Page 5-826)*

*AZ A:4:085 (ASM) – Excellent lithic tool artifact sketch by the way – whoever drew that has extraordinary skill.*

**UDWRe Response:**

**No response is needed.**

**BLM Comment 1682-92:**

*(Section 5.3.19, Page 5-826)*

**GENERAL COMMENT:** *All of the federal agencies, have already switched from NAD 1927 to NAD 1983 some ten years ago. BLM requires all site data for historic properties on lands under our jurisdiction be in NAD 1983. The location maps are in 1983, but plan drawings and site cards are in 1927.*

**UDWRe Response:**

**All the site cards have been updated to show only NAD 83. The UTM's were converted from NAD 27 to NAD 83 and all the maps have been revised.**

**BLM Comment 1682-93:**

*(Section 5.3.19, Page 5-826)*

*AZ A:4:086 (ASM) same comments as above (AZ A:4:085) regarding the use of the seven elements of site integrity. Suggest a review of NRB 15 regarding location, design, setting, feeling, association, materials, and workmanship. Further develop the argument for site integrity.*

**UDWRe Response:**

**The integrity discussion for site card AZ A:4:086 (ASM) has been revised to be stronger.**

**BLM Comment 1682-94:**

*(Section 5.3.19, Page 5-826)*

AZ A:4:087 (ASM) *Is there any more information regarding site impacts? Quite a few agents are listed which is appreciated. It would be nice to have a discussion on the extent of these impacts (e.g. where within the site boundary are these impacts? are the impacts throughout the entire site, or concentrated?, etc.) It is also a good convention to display impacts on the site plan view drawing.*

**UDWRe Response:**

**After a discussion with BLM regarding this site the site card has been revised.**

**BLM Comment 1682-95:**

*(Section 5.3.19, Page 5-826)*

**General Comment regarding the ASM site forms:** *Spot checking these site forms, BLM's consistent critique centers on the NRHP evaluations, which are very generic and canned. They do not follow the guidance described in NRB 15, and as such all of these forms are at risk of significant SHPO comment. Please clean them up and generate more detailed, site-specific evaluations. The AZ SHPO reviewer who will review this report is a seasoned Arizona contract archaeologist who is very knowledgeable about all of these aspects of site recording. These will not suffice. BLM, as the land manager, concurs. The information presented here would not allow BLM to manage these sites. A federal archaeologist has a lot of ability to manage and protect sites if a site's significance and what is impacting it is known. BLM can request that pasture fences be moved or relocate drinkers to mitigate livestock impacts. BLM can have fire crews remove 1000 hours fuel sources from within sites, structures, and features to minimize risk from catastrophic wildfire. BLM can cross-fall trees, install rip-rap, or geotextile cloth to control water erosion. BLM can administratively close an area to prohibit recreation such as camping and off-road vehicle activity. Federal archaeologists are quite effective at managing historic properties – but not without the information.*

**UDWRe Response:**

**All site forms were reviewed and revised to remove terse statements or canned language and to have stronger NRHP eligibility discussions.**

**BLM Comment 1682-96:**

*(Section 5.3.19, Page 5-826)*

**Appendix C**

*For the Arizona report, follow the guidance described in Standards for Documents Submitted for SHPO Review in Compliance with Historic Preservation Laws, Revised December 2012. This document can be found here for reference:*

[http://azstateparks.com/shpo/downloads/SHPO\\_2012\\_Report\\_Standards.pdf](http://azstateparks.com/shpo/downloads/SHPO_2012_Report_Standards.pdf)

**UDWRe Response:**

**The Arizona Survey Report, Appendix B, has been created using the Arizona SHPO's 2016 Guidelines and Standards.**

**BLM Comment 1682-97:**

(Section 5.3.19, Page 5-826)

*Modify the Executive Summary to follow the structure and format of AZ SHPO's Report Abstract described in the standards mentioned above.*

**UDWRe Response:**

**The Arizona Survey Report's, Appendix B, Abstract has been created using the Arizona SHPO's 2016 Guidelines and Standards.**

**BLM Comment 1682-98:**

(Section 5.3.19, Page 5-826)

*Having compared the main report and the Arizona report side-by-side, for the most part it appears that most of the reports are the same with some minor tweaks for Arizona- specific details. That said, all of the comments made for above in comments 1-85 would hold true applicable for the Arizona report.*

**UDWRe Response:**

**The Arizona Survey Report, Appendix B, has been created using the Arizona SHPO's 2016 Guidelines and Standards.**

**BLM Comment 1682-99:**

(Section 5.3.19, Page 5-826)

*Appendix B*

*Having compared the main report and the Utah report side-by-side, for the most part it appears that most of the reports are the same with some minor tweaks for Utah-specific details. That said, all of the comments made for above in comments 1-85 would hold true applicable for the Utah report.*

**UDWRe Response:**

**The Main Class III Report is accepted by the Utah SHPO as the Utah Survey Report.**

**BLM Comment 1682-100:**

(Section 5.3.19, Page 5-826)

*Appendix D*

*The Utah IMACS forms are significantly better than the Arizona site cards for this project. However, the NRHP eligibility discussions are short and could be better developed.*

**UDWRe Response:**

**After a discussion with the BLM regarding the NRHP eligibilities the site forms were revised.**

**BLM Comment 1682-101:**

(Section 5.3.19, Page 5-826)

42IN2847, in addition to early communications, what significant event in the region qualifies this for inclusion in the NRHP under criterion A? Is it the Settlement Period (1851 to 1869) presented on page C3-78 in section C3.3.4.1.1 in the Main Report? Because one can elaborate in these IMAC forms about these events (e.g. Site 42IN2847 is recommended eligible under criterion A for its association with the permanent settlement of southwestern Utah).

**UDWRe Response:**

**The eligibility recommendation has been revised to “Not Eligible”.**

**BLM Comment 1682-102:**

*(Section 5.3.19, Page 5-826)*

*When reviewing a large report, one cannot catch everything. Please use these comments as guidance and look for other instances throughout the report and in appendices where all of the above comments may also apply.*

**UDWRe Response:**

**Multiple searches were done to look for errors within the study reports.**

**BLM Comment 1683:**

*(Section 5.3.19.1.1.3, Page 5-828)*

*Flora. The great basin & desert shrub species list & add'l plants needs to have a better updated and complete species list.*

**UDWRe Response:**

**This section of the study report has been updated (Refer to page 2-3, 2.4 Flora).**

**BLM Comment 1684:**

*(Section 5.3.19.1.1.3, Page 5-829)*

*Mohave desert shrub list needs updating. Such as white bursage.*

**UDWRe Response:**

**This list in this section of the study report has been updated (Refer to page 2-4, 2.4.1.2 Mohave Desertscrub).**

**BLM Comment 1685:**

*(Section 5.3.19.1.1.3, Page 5-830)*

*Woodland formation needs updated species list. Example would be bitterbrush, winterfat.*

**UDWRe Response:**

**This list in this section of the study report has been updated (Refer to page 2-4, 2.4.4 Woodland Formation).**

**BLM Comment 1686:**

*(Section Cultural, Page 5-915)*

*Old Spanish Trail – should be Old Spanish National Historic Trail – do a global search and replace on this one. At places in the EA, it is simply listed as ‘Spanish Trail.’*

**UDWRe Response:**

**Old Spanish National Historic Trail has been used in all the appropriate places throughout the study report.**

**BLM Comment 1687:**

*(Section General, Page 5-919)*

*Many of the figures in this section are blurry and of poor resolution, such as 5-209. But they all need to be cleaned up.*

**UDWRe Response:**

**The figures in this section have been “cleaned up”.**

**BLM Comment 1688:**

*(Section 5.3.19.1.2.2, Page 5-938)*

***Fourth paragraph:** Recreation areas like Glen Canyon, Grand Canyon, Zion, and Bryce Canyon - Please add the Grand Canyon National Monument. This was the primary driver of travel and tourism before any of the others mentioned. The North Rim of the Grand Canyon was a Utah access point in the 1890’s and early 1900 era.*

**UDWRe Response:**

**This section of the cultural resources report is a general discussion on tourism and recreation and is not specific to any national park or monument.**

**BLM Comment 1689:**

*(Figure 5-215, Page 5-940)*

*Comments from BLM’s cultural lead made on this figure back in 2014, do not appear to have been considered (see previously submitted comments).*

**UDWRe Response:**

**All of BLM comments from 2014 have been addressed. Comment resolution tables were sent to BLM in April 2015 showing that their comments had been addressed.**

**BLM Comment 1690:**

*(Section 5.3.19.1.1, Page 5-962)*

*Taroweap Road – should be Toroweap Road*

**UDWRe Response:**

**This misspelling has been corrected in the study report (Refer to page 5-107, 5.3.3 Historic Site Discussion).**

**BLM Comment 1691:**

*(Section 5.3.20.1.4, Page 5-1018)*

*Again, none of the correspondence, communication, outreach that MWH and Sagebrush conducted that is presented in this section is “consultation”. An ethnographic study is not consultation – it is a study. It is part of our identification efforts within the Section 106 process, but it does not constitute consultation from an EO13175 perspective. This responsibility cannot be delegated, so the field trips and workshops conducted 3rd party consultants as part of developing the ethnographies are not considered consultation. BLM has previously made this comment. Please fix these sections so as not to mislead the public when they read these studies.*

**UDWRe Response:**

**UDWRe understands that a consultant may not undertake consultation in the sense that is called out in the regulations. When interacting with the Tribes it is considered follow up communication and data gathering tasks. This will be addressed in the text.**

**BLM Comment 1692:**

*(Section Cultural, Page 5-??)*

*Could not find discussion of impacts on historic trails in this section. What will the effects of the construction of the pipeline, transmission line, associated access roads, etc. be on the Old Spanish National Historic Trail and other historic trails in the APE? The alignment of the Lake Powell pipeline generally follows the same route as the Old Spanish National Historic Trail, especially in the Cockscomb area, east of the Cockscomb, White Sage Flat, Johnson Run, and the area around Pipe Spring NM and the Kaibab Paiute Reservation. Today most of this trail alignment retains its historic setting. What will the construction of a pipeline, transmission line, and a natural gas pipeline do to this historic resource?*

**UDWRe Response:**

**Impacts and effects are a NEPA issue, not Section 106. The HPMP will address these issues, but only after BLM has made determinations on all the sites.**

**BLM Comment 1693:**

*(Section 5.3.21.1.2, Page 5-1030)*

*Line 16: Change “train” to “terrain”*

**UDWRe Response:**



**This misspelling has been corrected in Study Report 8 - Paleontological Resources (Refer to page 3-1, 3.2 Fossils Identified During the Ground Surveys).**

**BLM Comment 1694:**

*(Section 5.3.21.3.1, Page 5-1039)*

*Avoidance is only necessary when fossils are of high scientific or interpretive value and cannot be collected.*

**UDWRe Response:**

**This statement has been added to Study Report 8 - Paleontological Resources (Refer to page 5-1, 5.1 South Alignment).**

**BLM Comment 1695:**

*(Section 5.3.22, Multiple Pages)*

*Information throughout this section needs to be replaced with current data. Much of it is almost 10 years old.*

**UDWRe Response:**

**Information was updated as available and as time allowed.**

**BLM Comment 1696:**

*(Section 5.3.22.5, Page 5-1095)*

*This section on unavoidable socioeconomic resource impacts is obviously incomplete and excessively vague. The dominant public concerns about the LPP are related to potential exorbitant costs and financing, and how those may hugely increase future development impact fees and water rates. Those, in turn, could greatly harm the economy of Washington County, reduce property values, and scare away businesses. Indeed, over twenty Utah university economics professors released a public letter last October raising serious related questions. At this time, there is reportedly no official estimate of projected LPP construction and long-term financing costs, nor a plan to handle or repay those costs. This information is crucial to determine potential socioeconomic effects. When that information is available, this section would need substantial revision to pass muster in the FERC DEIS.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Refer to the responses to Gail Blattenberger's Comments in the General Comments section.**

**A financing plan is premature at this stage. First, as discussed elsewhere [cross cite], the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of**

at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

**BLM Comment 1697:**

*(Section 5.3.22.5, Multiple Pages)*

*“The use of energy during construction of the LPP Project would be a short-term unavoidable adverse effect on energy resources. The use of construction materials for the LPP Project would be a long-term unavoidable adverse effect on energy resources, raw materials and fabricated equipment and parts.” Why? These conclusions are confusing.*

**UDWRe Response:**

**UDWRe’s view is that the conclusions are not confusing.**

**BLM Comment 1698:**

*(Appendix E, Page Map Sets)*

*The Hurricane Cliffs Afterbay and Forebay are not obvious in the detailed map sets or depicted in the legend of the detailed map sets.*

**UDWRe Response:**

**The maps have been revised to address the comment.**

**BLM Comment 1699:**

*(Appendix E, Map Panels)*

*The map panels for utility corridor 68-116 state that the width of the corridor is 3500 feet. Please correct. The correct width is stated on page 3-10 and 3-88.*

**UDWRe Response:**

**The reviewer has confused two distinctly different corridors. The “68-116” corridors identified on the map panels are part of the West Wide Energy Corridor and are indeed as wide as shown on the panel. The spatial data imported on to the panels came directly from Argonne National Laboratory and federal agencies. The document text is referring to the congressionally-designated GSENM utility corridor.**

**NPS Comment 1:**

*(Section 5, Page 5-100)*

*Please clarify. The Law of the River allocation to the Upper Basin?*

**UDWRe Response:**

**What is known as “The Law of the River” is the collection of compacts, treaties, legislation, court decisions and agreements. The Colorado River Compact allocates the use**

of up to 7.5 million acre/feet of water. This does not mean the entire allocation is reliably available.

**NPS Comment 2:**

*(Sections 5.3.3.2.2.1 Colorado River and 5.3.3.2.3.1 Lake Powell)*

- *Please provide basic information about the climate change inflow hydrology. Is the Climate Change (CC) hydrology generally wetter or drier than Direct Natural Flow (DNF)? Presumably it is generally drier. If so, then it is not immediately obvious why the annual release differences in Tables 5-22 and 5-25 are greatest under the DNF inflow hydrology than CC. Please provide additional analysis.*
- *The NPS request additional clarification on the specific amount of annual releases. Results provided in this context, or as duration curves, suggest that the effect(s) of the proposed action is insignificant because it only reduces releases by 81,000 acre foot (af) or 1.2% of the total. While true, it somehow suggests that 81,000 af (which is very close to the project amount of 86,249 af) is less important downstream of Lake Powell than it is upstream. Also, some discussion here of the worst case scenarios is warranted (i.e., not just average difference of 69,000-to 81,000 af; but maximum differences of 380,000-442,000 af).*
- *The NPS requests additional information on Lake Powell elevations analysis (under DNF and CC hydrologies), elevations approach minimum power pool of 3,490 feet.*

**UDWRe Response:**

The text has been revised to address the comment.

**NPS Comment 3:**

*(Sec. 5.3.3.2.2.2 Virgin River Drainage)*

*The Reports States "The United States Geological Survey {USGS} 09413200 and USGS 09413500 gage accuracies are described as 'fair' which means that measurements are within 16 percent of the actual flows {USGS, 2015}. Differences between the future without the LPP Project (Base Case) and future with the LPP Project (Proposed Action) in simulated stream flow along the Virgin River in the lower St. George area would be small, and within the degree of accuracy of the USGS stream gages in this reach of the Virgin River. Therefore, the differences between Virgin River flows under the future without the LPP Project (Base Case) and future with the LPP Project (Proposed Action) would not be measurable."*

- *The NPS Requests changes in flow in the Virgin River be further analyzed and described. The analysis should not rely on "fair" rating of USGS gages to assume that the differences in flow would not be measureable and presumably have no effect on Virgin River resources. Depending on time of year, type of the flow (e.g., baseflow, peak flow, shoulder flow) etc., a 16% change in flow may have significant effects on biotic (e.g., fisheries, aquatic macroinvertebrates, food web dynamics, riparian/wetland vegetation, available/usable habitat) and abiotic (e.g., temperature, channel and sediment dynamics) resources.*

- *It is unclear if the project action would increase the number of 0-flow days, extend the duration of critical low flow periods, or attenuate the peak sufficiently to decrease sediment transport capacities. Flow duration curves and mean monthly flows provide insufficient detail to analyze and describe the potential effects of the project.*

**UDWRe Response:**

**The USGS is the recognized federal agency for stream flow measurement. The Virgin River flows are highly variable and gage accuracy is difficult to maintain throughout the range of flows and sediment transport that occurs in the Virgin River. The accuracy of the gages is used to explain any differences in mean monthly flows at the USGS gages coincident with the VRDSM nodes or close to the nodes. The LPP Project would not increase the number of zero-flow days or extend the duration of critical low flow periods. Return flows resulting from the LPP Project would maintain the river flows at the same conditions that would occur without the LPP Project. The flow duration curves provide a 72-year daily flow record upon which to base probability of percent of time that a flow would occur at that point in the river.**

**NPS Comment 4:**

*(Section 5.3.3.2.5, Pages 5-155 and 5-156)*

*Exposed pipes may not always be recovered during falling limb of the peak flow hydrograph; eventually they will be dug out.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 5:**

*(Section 5.3.3.3.1, Page 5-156)*

*These stream crossing precautions seem inadequate given that streams can excavate and refill their beds up to 6-8' during major storm events.*

**UDWRe Response:**

**Your comment has been noted. Scour protection of stream crossings would be addressed as part of the detailed design phase of the project.**

**NPS Comment 6:**

*(Section 5.3.3.2.2.3, Page 5-158)*

*Third paragraph: Figure 5-54 referenced in the text does not show intermittent stream crossings*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 7:**

*(Section 5.3.4.2.2.2, Page 5-206)*

**Fourth paragraph:** Construction equipment should be checked and regularly monitored for leaking hydraulic fluid, oil, grease, and fuel in all areas, not just in temporarily dewatered reaches of stream channels. Relevant land management agencies should be notified of any spills or leaks detected.

**UDWRe Response:**

The text has been revised to address the comment. Please note the text is specifically referring to BMPs at stream crossings.

**NPS Comment 8:**

(Section 5.3.4.2.2.2, Page 5-206)

**Sixth paragraph:** NPS requests additional detail regarding land application of removed subsurface water

**UDWRe Response:**

Additional detail is provided in Section 5.3.5 – Groundwater Resources.

**NPS Comment 9:**

(Section 5.3.6.1.5, Page 5-241)

**Fourth paragraph:** Zebra mussels (*D. polymorpha*) are not present in Lake Mead.

**UDWRe Response:**

According to the National Park Service website live Zebra mussels have been found in Lake Mead. ([home.nps.gov/applications/release/print.cfm?id=719](http://home.nps.gov/applications/release/print.cfm?id=719))

**NPS Comment 10:**

(Section 5.3.6.1.5.1, Page 5-242)

**Second paragraph:** "Gamete, veliger and post-veliger" are not standard larval life stage terminologies for *Dreissena* mussels. "Gametes" are unfertilized. "Veliger" is the general term. "Post-veliger" must be an adult. Typical terms used include trochophore, straight-hinged or D-shaped, umbonal, and pediveliger.

**UDWRe Response:**

Your comment has been noted.

**NPS Comment 11:**

(Section 5.3.6.1.5.1, Page 5-243)

**Second paragraph:** The "BOR Administered Lands" and BPS-1 are within GLCA and NPS Integrated Pest Management Policies apply. Required are annual pre-approval and reporting for pesticides (as defined by FIFRA) as well as meeting storage requirements and limits. Purchase, storage, and use of the biological molluscicide must meet these requirements.

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 12:**

*(Section 5.3.6.1.5.1, Page 5-243)*

**Second paragraph:** *Veligers (product of mussel reproduction/spawning) are being produced all year long in down-lake area (especially near the dam). Molluscicide dosing will likely be required all year.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 13:**

*(Section 5.3.6.1.5.1, Page 5-243)*

**Third paragraph:** *Early stages of Dreissena veligers will pass through a 100-micron filter.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 14:**

*(Section 5.3.6.1.6.2, Page 5-345)*

**Fourth paragraph:** *Rainbow Trout may incidentally move into the very lowest portion of the Paria River, but generally, their habitat is not present (too warm and silty). Rainbow trout incidentally enter the Paria River from their large self-sustaining population in the Colorado River below Glen Canyon Dam.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 15:**

*(Section 5.3.6.3, Page 5-253)*

**Fourth paragraph:** *Construction equipment should be checked and regularly monitored for leaking hydraulic fluid, oil, grease, and fuel in all areas, not just in temporarily dewatered reaches of stream channels. Relevant land management agencies should be notified of any spills or leaks detected.*

**UDWRe Response:**

**The text has been revised to address the comment. Please note the text is discussing stream crossings.**

**NPS Comment 16:**

(Section 5.3.8.2, Page 5-320)

*Vegetation, especially shrub-tree vegetation that is "cleared and grubbed" recover slowly - most desert shrub/tree species are very slow growing. A 25' juniper can be 500 or more years old. A 3' blackbrush could be 200 years old. Assertions that impacts are short-term are not correct. They are long-lasting and for species like blackbrush are essentially permanent.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 17:**

(Section 5.3.8.3.1, Page 5-322)

*Very few "endemic" species have been propagated and there is very little knowledge on seeding rates and production for most of these species - how is this going to be accomplished? This section is confusing, as most of the dominant species that would be used in re-seeding are not endemic to the regions - shadscale, sagebrush, four-wing, ricegrass, etc., are widespread species in the west.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 18:**

(Section 5.3.8.4.1, Page 5-323)

*Here and in many other places in this chapter in the cumulative effects sections many planned and ongoing projects are not mentioned, such as the current Highway 89 fiber-optics project, various fencing projects (the Highway 89 deer-proof fence), etc. These are all part of the "cumulative effects" and need to be included in the discussion.*

**UDWRe Response:**

**UDWRe consulted with NPS on potential interrelated actions that potentially would cause cumulative impacts with the LPP Project impacts. All information received from NPS was evaluated and included as applicable.**

**NPS Comment 19:**

(Section 5.3.8.5, Page 5-324)

*For some Colorado Plateau vegetation the effects would be long-term and adverse, especially for blackbrush vegetation along the proposed route.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 20:**

(Section 5.3.9.2.2)



**Potential Effects Eliminated from Further Analysis:**

*The NPS requests additional analysis on the impacts on the riparian areas and wetlands along the Virgin River in order to justify the discussion of eliminating this topic from further analysis. Timing of flow, water chemistry, quality, temperature may all affect these resources; as might adding or subtracting 16% of the flow.*

**UDWRe Response:**

**UDWRe's view is that no additional analysis is warranted.**

**NPS Comment 21:**

*(Section 5.3.9.3, Page 5-345)*

*Single samples of scour in the washes, especially West of Blue Pools, will not indicate potential scour depth during large storm events - thus pipe encasement could be exposed during heavy scour at some of the washes during big (100+ yr) storm events.*

**UDWRe Response:**

**The comment has been noted.**

**NPS Comment 22:**

*(Table 5-106, Page 5-400)*

*Schismus arabicus/barbatus is common in the GLCA stretch along Highway 89.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 23:**

*(Section 5.3.10.2, Page 5-402)*

*Eriogonum corymbosum var. nilsii is a candidate.*

**UDWRe Response:**

**Your comment has been noted.**

**NPS Comment 24:**

*(Section 5.3.11.1.1.3, Page 5-432)*

*Bighorn habitat and animals also occur in the Thousands Pockets/Water Pockets/Cedar Mountain area to the west of Highway 89 in AZ.*

**UDWRe Response:**

**HabiMap, which was accessed in April of 2016, shows bighorn habitat south and west of the project's Glen Canyon to Buckskin Substation Transmission line.**

**NPS Comment 25:**

*(Section 5.3.11.1.2.1, Multiple Pages)*

*Many taxonomic issues and misspellings in Tables 5-108, 109 and 110.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 26:**

*(Section 5.3.11.1.2.1, Page 5-436)*

*Holbrookia maculata has never been found on the Colorado Plateau in the project area. It may occur locally around St. George.*

**UDWRe Response:**

**The Common lesser earless lizard (Holbrookia maculata) was possibly a misidentified Zebra-tailed (Callisaurus draconoides)**

**NPS Comment 27:**

*(Section 5.3.11.1.2.3, Page 5-439)*

*The list if [sic] Table 5-110 is incomplete for the GLCA/local Colorado Plateau region*

**UDWRe Response:**

**No specific species information was given.**

**NPS Comment 28:**

*(Section 5.3.11.1.2.3, Page 5-439)*

*Arizona elegans (glossy snake) has been observed directly in the project area in GLCA as reported in material sent to the contractors and is a special status species.*

**UDWRe Response:**

**The glossy snake is included in Final Study Report 13 – Special Status Wildlife Resources.**

**NPS Comment 29:**

*(Section 5.3.11.2.2.2, Page 5-443)*

*AZ bighorn use the area to move back and forth between Lake Powell and areas to the west along the north side of Paria Canyon.*

**UDWRe Response:**

The website: <http://gis.utah.gov/data/bioscience-overview/departments-wildlife-resources-habitat-areas/> shows bighorn habitat along the Paria River contiguous to the coxcombs north of the project area and then south through the coxcombs to Arizona.

**NPS Comment 30:**

*(Section 5.3.11.2.2.3, Page 5-4455)*

*The statement that "...disturbed areas would regain much of their habitat values in two or three growing seasons..." is not supported by any studies or observational data. It is highly unlikely that any shrub habitat would recover in less than 20-30 yrs, and not at all for some species such as blackbrush.*

**UDWRe Response:**

**Substituted "some" for "much" throughout the report.**

**NPS Comment 31:**

*(Section 5.3.11.2.5.2, Page 5-448)*

*What about bighorn migration in the AZ portion of the transmission line project - any new construction in this area could affect herd movements?*

**UDWRe Response:**

**AGFD HabiMap accessed March 2016 shows bighorn sheep habitat occurring to the south and west of Glen Canyon Dam, approximately 3.4 miles south of the Transmission Line Alternative. Desert bighorn sheep habitat is documented along Kanab Creek. The northern boundary of bighorn habitat in Kanab Creek is located approximately 4.7 miles south of the LPP project alignment. Therefore the project alignment is not anticipated to effect bighorn movement corridors in Arizona.**

**NPS Comment 32:**

*(Table 5-112, Page 5-467)*

*The table does not include any information from the NPS-GLCA.  
There are 47 species on the GLCA special status species wildlife list.*

**UDWRe Response:**

**Special status species are included in Final Study Report 13 – Special Status Wildlife Resources.**

**NPS Comment 33:**

*(Section 5.3.12.1.2.2, Page 5-482)*

*Sage sparrow is now named Sagebrush Sparrow.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 34:**

*(Section 5.3.12.1.2.2, Page 5-485)*

*Two GLCA species are not on the list, Desert night lizard which may occur in the project area, and Arizona glossy snake which does occur in the project area.*

**UDWRe Response:**

**The species have been added to the list and the effects analyzed and determinations made.**

**NPS Comment 35:**

*(Section 5.3.12.2.2.1, Pages 5-488 to 5-489)*

*The statement that noise would not exceed ambient conditions at pump stations directly contradicts Chapter 3, page 3-88 which shows large exceedances from ambient, with values approaching 70 dB at 500'.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 36:**

*(Section 5.3.12.2.3.2, Pages 5-497 to 5-498)*

*Please evaluate the impact to hibernating animals (small mammals and reptiles) in burrows.*

**UDWRe Response:**

**Refer to section 5.3.12.2.3.2 - Mammals Construction Effects and also birds and reptile's construction effects summaries.**

**NPS Comment 37:**

*(Section 5.3.12.2.3.2, Pages 5-499 and 5-513)*

*The effects of new transmission lines on eagles needs to be analyzed - In addition to Raptor proofing the poles what mitigation for bird collisions are being considered?*

**UDWRe Response:**

**The following has been added to 5.3.12.3.1 General Mitigation Measures:**

- **New and upgraded overhead power transmission lines would be constructed to meet the most current edition of Suggested Practices for Raptor Protection on Power Lines (EEI 2006) and Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012).**
- **An Avian Protection Plan should be developed following the Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005) prior to construction.**

**NPS Comment 38:**

(Section 5.3.13.1.1.1, Page 5-531)

**First paragraph:** 16,687 acres is 1.3% of Glen Canyon NRA (1.25 million acres total).

**UDWRe Response:**

**UDWRe's view is that the text is correct as written.**

**NPS Comment 39:**

(Section 5.3.13.1.1.1, Page 5-535)

**Second paragraph:** Lone Rock beach does not officially close in the winter.

**UDWRe Response:**

**The text has been revised to address this comment.**

**NPS Comment 40:**

(Section 5.3.13.1.1.8, Page 5-560)

**Pipe Spring National Monument**

*Pipe Spring National Monument is located near the proposed pipeline route. The description provided on page 5-560 is accurate. Please add the following, "The expansive view from the monument is an important part of the historic character of the site because it provides an appreciation of the isolation of the settlement, and of the commanding position provided by the location."*

**UDWRe Response:**

**The text has been revised to address this comment.**

**NPS Comment 41:**

(Section 5.3.13.1.2.3, Page 5-569)

*For GLCA, this needs to be revisited as there are significant potential issues with visual and noise impacts to visitors (Hughes quote is incorrect).*

**UDWRe Response:**

**The text has been revised to address this comment.**

**NPS Comment 42:**

(Section 5.3.13.2.1.8, Page 5-601)

**Pipe Spring National Monument**

*The "existing highway" pipeline alternative route would be within the highway 389 right-of-way that is 0.25 miles from Pipe Spring National Monument. The "south alternative" route is four miles south of the monument. Both are within the primary viewshed of monument visitors. The construction impacts described for the existing highway and south alternative pipeline routes in sections 5.3.13.2.1.8 and 5.3.13.2.2.4 respectively are generally accurate. For the construction*

*impacts for the south alternative (page 5-601) we suggest adding, "Continuing impacts would include the appearance of the trace of disturbed soil across the viewshed lasting until revegetation matures. This impact would be similar to other existing powerlines and pipeline along similar alignments. Fugitive dust from operational activities along the pipeline service roads could contribute to visibility impacts, depending on their cycle of use. "*

**UDWRe Response:**

**UDWRe does not agree with the suggested edits.**

**NPS Comment 43:**

*(Section 5.3.14.1.2.7, Page 5-630)*

*As stated above in this last paragraph, BLM administers the permits, not GLCA.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 44:**

*(Section 5.3.16.2.3.6, Page 5-749)*

***Second paragraph:** Effects having consistency with the existing landscape character may not be sufficient to fulfill Glen Canyon NRA's mission to "preserve and protect the scenic (features)" in the area.*

**UDWRe Response:**

**This comment needs clarification.**

**NPS Comment 45:**

*(Section 5.3.18.1.4, Page 5-809)*

*This statement directly contradicts Chapter 3, page 3-88 estimated noise levels.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**NPS Comment 46:**

*(Section 5.3.19, Multiple Pages)*

**Cultural Resources:**

*Although the section is generally well done, it omits that the Colorado River has been identified by several tribes as a traditional cultural property. There is documentation with State Historic Preservation Office (SHPO), AZ. That does include the Colorado River that flows through GLCA, though it is currently "disguised" as the Lake Powell reservoir.*

**UDWRe Response:**

**Section 5.4 Ethnographic Report Contributions to Eligibility in the study report covers this comment (Refer to page 5-109).**

**NPS Comment 45:**

*(Section 5.3.19, Multiple Pages)*

**Cultural Resources:**

*NPS has not had access to archeological and historic preservation inventory survey data or methodology. Access to some of the ethnographic data was provided at a late date therefore the review is incomplete.*

**UDWRe Response:**

**Survey data, methodology and a brief overview of the ethnographic data are all included in Final Study Report 3 – Archeological and Historic-Era Resources. A more detailed description of the ethnographic data can be found in the Final Study Report 23 - Ethnographic Resources.**

**NPS Comment 46:**

*(Section 5.3.19, Multiple Pages)*

**Cultural Resources:**

*A more thorough survey is needed to identify Old Spanish Trail segments that still exist. The NPS suggests low- level airborne LiDAR or photogrammetric recording to investigate trail presence.*

**UDWRe Response:**

**This comment lies outside the current scope of work.**

**NPS Comment 47:**

*(Section 5.3.19.1, Page 5-827)*

*The text notes Notable landforms that the penstock would cross in this region include Kanab Creek, Bitter Seeps Wash, Pipe Valley, and Moonshine Ridge as well as other affected landscapes e.g., the Vermillion Cliffs and Hurricane Cliffs. The NPS requests further analysis, in regard to evaluation of these areas as cultural landscapes.*

**UDWRe Response:**

**Cultural landscapes will be addressed in the final version after consultation with NPS.**

**NPS Comment 48:**

*(Figure 5-207, Page 5-914)*

*The map is unclear and needs to be provide overlay of the LPP so that direct and indirect effects can be generalized.*

**UDWRe Response:**



**This map is used in the historic context of the study report and it would not be an appropriate venue to discuss direct and indirect effects in this section. Also, impacts and effects are a NEPA issue, not Section 106.**

**NPS Comment 49:**

*(Section 5.3.19.1, Page 5-915)*

*A more detailed analysis and description of effects to the Old Spanish Trail should be included. The trail could potentially experience direct adverse effects. A more detailed analysis of the trail is necessary to fully document the trail and effects.*

**UDWRe Response:**

**This comment lies outside the current scope of work. Impacts and effects are a NEPA issue, not Section 106.**

**NPS Comment 50:**

*(Section 5.3.20.1.3, Page 5-1016)*

***Why the Grand Canyon and Associated River Systems are Important to Tribes:***

*Section omits that the river corridor also includes Glen Canyon.*

*Clarify how withdrawals will effect fluctuations in reservoir levels that will occur in addition to what already exists from normal operations and climate change. The NPS requests additional impact analysis on cultural resources along the reservoir shoreline.*

**UDWRe Response:**

**The LPP Project diversions from Lake Powell would have minor, un-measurable effects on reservoir levels, and these effects, even with projected climate change, would be within the normal fluctuations of the reservoir from operations by Reclamation. No noticeable changes in reservoir levels would occur that could expose or inundate cultural resources along the reservoir shoreline that do not already occur as a result of normal operational fluctuations.**

**USFWS Comment 1:**

*(Section 5.3.6.1.6, Page 5-254)*

***Aquatic Resources in Perennial Drainages:***

*We recommend any stream crossings be constructed outside the spawning season for any listed or conservation agreement species (flannelmouth sucker and bluehead sucker). Spawning season for these species in the project area is generally April 1 to July 31.*

**UDWRe Response:**

**Your comment has been noted,**

**USFWS Comment 2:**

*(Section 5.3.6.3, Page 5-262)*

***Protection, Mitigation, and Enhancement Measures; 1st paragraph after BMP list:***

*We suggest rewording the sentence in the paragraph. The effects of best management practices (BMPs) would not provide a positive (or beneficial) effect to aquatic resources. The provided BMPs will not increase aquatic resource populations, food availability, habitat, or water in the affected aquatic systems.*

*Instead, BMPs are intended to reduce or eliminate adverse effects from project actions.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 3:**

*(Section 5.3.8.2, Page 5-329)*

***Environmental Effects:***

*This section should include the possible habitat loss or habitat degradation of special status species due to induced growth and development for all alternatives.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section.**

**USFWS Comment 4:**

*(Section 5.3.8.2.1, Pages 5-329 and 5-330)*

***Proposed Action:***

*We disagree with the summary statement in this section: "The Proposed Action operation would have no direct or indirect effects on vegetation communities." This statement is not supported by the earlier paragraph in this section of the document that identifies direct effects to vegetation communities within the proposed action construction ROW. We recommend you consider the impact of soil disturbance and loss of native vegetation within the ROW that can serve as a vector for weed dispersal within the proposed ROW and their spread into adjacent undisturbed habitats (as described on 5-392 for *Pediocactus sileri*; 5-410 in section 5.3.10.2; Executive Order 13112 Section 2(a)2 as described on 5-414). We recommend that you modify the sentence to state: "The Proposed Action operation would have direct or indirect effects on vegetation communities."*

**UDWRe Response:**

**The text has been revised.**

**USFWS Comment 5:**

*(Section 5.3.8.2.1, Page 5-329)*

***Proposed Action:***

*We also disagree that the clearing and grubbing of vegetation will result in short term effects to the vegetation community unless there is a commitment in section 5.3.8.3.1 to 1) salvage and reapply topsoil, 2) ensure the revegetation efforts identified are successful, and 3) there is adequate control of invasive weeds.*

**UDWRe Response:**

**The text discusses salvaging and replacing topsoil, monitoring revegetation efforts and revegetating if necessary, and controlling invasive weeds.**

**USFWS Comment 6:**

*(Section 5.3.8.2.2, Page 5-330)*

***Existing Highway Alternative:***

*We disagree with the summary statement: "The Existing Highway Alternative operation would have no direct or indirect effects on vegetation communities." This statement is not supported by the earlier paragraph in this section of the document that identifies direct effects to vegetation communities within the proposed action construction ROW. We recommend you consider the impact of soil disturbance and loss of native vegetation within the ROW that can serve as a vector for weed dispersal within the ROW and their spread into adjacent undisturbed habitats (as described on 5-392 for *Pediocactus sileri*; 5-410 in section 5.3.10.2; Executive Order 13112 Section 2(a)2 as described on 5-414).*

*We recommend that you modify the sentence to state: "The Existing Highway Alternative operation would have direct or indirect effects on vegetation communities."*

**UDWRe Response:**

**Refer to the response to USFWS Comment 4 in the Chapter 5 section of the comments.**

**USFWS Comment 7:**

*(Section 5.3.8.2.3, Page 5-331)*

***Southeast Corner Alternative:***

*We disagree with the summary statement: "The Southeast Corner Alternative operation would have no direct or indirect effects on vegetation communities." This statement is not supported by the earlier paragraph in this section of the document that identifies direct effects to vegetation communities within the proposed action construction ROW. We recommend you consider the impact of soil disturbance and loss of native vegetation within the ROW that can serve as a vector for weed dispersal within the ROW and their spread into adjacent undisturbed habitats (as described on 5-392 for *Pediocactus sileri*; 5-410 in section 5.3.10.2; Executive Order 13112 Section 2(a) 2 as described on 5-414).*

*We recommend that you modify the sentence to state: "The Southeast Corner Alternative operation would have direct or indirect effects on vegetation communities."*

**UDWRe Response:**

**Refer to the response to USFWS Comment 4 in the Chapter 5 Comments section.**

**USFWS Comment 8:**

*(Section 5.3.8.2.4, Page 5-331)*

***No Lake Powell Water Alternative:***

*The evaluation of impacts to non-native vegetation is not appropriate in this section that evaluates impacts to native vegetation communities, and we recommend that the discussion be removed.*

**UDWRe Response:**

**Your comment has been noted.**

**USFWS Comment 9:**

*(Section 5.3.8.4, Page 5-332)*

***Cumulative Effects:***

*This section should include the future Warner Valley Reservoir project and other associated future water projects planned by Kane County Water Conservancy District (KCWCD) and WCWCD if these projects are a part of the no action alternative since it is mentioned in section .5.3.15.4.4. Cumulative Effects, page 5-716.*

**UDWRe Response:**

**These projects have not been subject to planning and require further approvals and therefore are not considered in the No Action Alternative.**

**USFWS Comment 10:**

*(Section 5.3.8.4.4, Page 5-332)*

***No Lake Powell Water Alternative:***

*The evaluation of impacts to non-native anthropogenic vegetation is not appropriate in a section evaluating impacts to native vegetation communities. We recommend that you remove language pertaining to non-native anthropogenic vegetation from the section.*

**UDWRe Response:**

**Your comment has been noted.**

**USFWS Comment 11:**

*(Table 5-94, Page 5-360)*

*We recommend that you change the "no" designation to "yes" in the column entitled "Found in Area of Potential Effect (Yes/No)" for the following federally listed plant species in the Table:*

- *Arctomecon humilis* (Dwarf bear-poppy)
- *Asclepias welshii* (Welsh's milkweed) and designated critical habitat
- *Astragalus ampullarioides* (Shivwits milkvetch) and designated critical habitat
- *Astragalus holmgreniorum* (Holmgren's milkvetch) and designated critical habitat
- *Carex specuicola* (Navajo sedge)
- *Cycladenia humilis* var. *jonesii* (Qones cycladenia)
- *Lesquerella tumulosa* (Kodachrome bladderpod)
- *Sphaeralcea gierischii* (Gierisch globemallow)

*These federally listed plant species have the potential to occur within the action area and areas indirectly impacted by induced growth and development from the proposed action. Some of the species were previously identified as having potential to occur in the proposed action area while others have newly documented occurrences that need to be evaluated with respect to the proposed action area.*

*We recommend that you: 1) include the 8 listed plant species identified above in your analysis until additional information is provided that indicates whether a species or its designated critical habitat is not likely to be impacted by the proposed action; 2) summarize and quantify areas of suitable habitat, designated critical habitat, and/or areas of known occupancy within the proposed action area for each species; and 3) evaluate impacts to the species and/or designated critical habitat from the direct and indirect effects of the proposed action. For example, impacts to Shivwits milkvetch designated critical habitat were discussed in prior study plans, but impacts to Shivwits milkvetch and designated critical habitat are not discussed or evaluated here. A commitment to perform additional presence/absence surveys prior to construction should also be a Project requirement.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section.**

**USFWS Comment 12:**

*(Table 5-94, Page 5-360)*

*We recommend that you update the status of *Sphaeralcea gierischii* (Gierisch globemallow) in the Table. It is federally listed as endangered. We recommend that you update the status of *Eriogonum corymbosum* var. *nilesii* (Las Vegas Buckwheat) in the Table. It is no longer a candidate for federal protection under the ESA.*

**UDWRe Response:**

**The status of *Sphaeralcea gierischii* has been updated as requested. *Eriogonum corymbosum* var. *nilesii* is no longer a candidate for listing and does not currently have any other federal status, so it has been removed from this evaluation.**

**USFWS Comment 13:**

*(Section 5.3.10.1.2.4, Page 5-373)*

*Eriogonum corymbosum* var. *nilesii* (Las Vegas Buckwheat). We recommend that you update the results of your surveys and this entire section based on the results of the genetic evaluation for this taxon. This taxon no longer occurs in Washington County, Utah.

**UDWRe Response:**

***Eriogonum corymbosum* var. *nilesii* is no longer a candidate for listing and does not currently have any other federal status, so it has been removed from this evaluation.**

**USFWS Comment 14:**

*(Table 5-101, Page 5-389)*

*Pediocactus sileri* (*Siler pincushion cactus*). This table provides specific location information for the threatened cactus. The location information in this Table should be removed from future documents and redacted from copies of this document that are made publicly available.

**UDWRe Response:**

**The detailed locality information has been removed from the evaluation as requested.**

**USFWS Comment 15:**

(Section 5.3.10.1.2.8, Page 5-392)

*Pediocactus sileri* (*Siler pincushion cactus*). We are not convinced that transplantation of *P. sileri* is an appropriate conservation measure and it certainly should not be the primary conservation measure. These cacti do not transplant well and will likely sustain high mortality from transplantation efforts. Habitat improvement projects and protections should be considered a priority mitigation commitment to offset any unavoidable impacts to the species and its habitat from this project.

We recommend that you add the following sentence at the end of this section: Additional conservation measures for *P. sileri* will be developed in consultation with the USFWS."

**UDWRe Response:**

**The requested text has been inserted.**

**USFWS Comment 16:**

(Section 5.3.10.2, Page 5-410)

***Environmental Effects:***

*This section should include the possible habitat loss or habitat degradation of special status species due to induced growth and development for all alternatives.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section.**

**USFWS Comment 17:**

(Section 5.3.10.3.1, Pages 5-412 and 5-413)

**General BMPs:** We recommend revision of this section so the BMPs are identified as commitments by modifying the language for the BMPs below (adding the underlined text and removing the strikethrough text):

"The following are general BMPs that ~~may be considered for~~ will be implemented ~~implementation for~~ to avoid and minimize overall project related effects:

**BMP-G2:** On-site project personnel ~~should~~ will be educated about federal and state listed and sensitive species and the importance of avoiding and minimizing effects on individuals and habitats. All project personnel ~~should~~ will be informed on the BMPs, protective measures, and conservation strategies.

**BMP-G3:** All applicable BMPs, protective measures, and conservation strategies ~~should~~ will be applied to all unsurveyed suitable habitat for federal and state listed and sensitive species and habitats until surveys have been conducted to clear the project areas or prescribe appropriate and specific BMPs, protective measures, and conservation strategies.

**BMP-G5:** Use of motorized vehicles during construction ~~should~~ will be limited to the construction (cleared) corridor or temporary site access routes. Temporary site access routes ~~should~~ will be surveyed for presence of ~~federal and state listed and~~ sensitive species and habitats and presence of invasive species. Appropriate BMPs ~~should~~ will be implemented on temporary site access routes.

**BMP-G6:** All temporary access routes ~~should~~ will be rehabilitated to pre- disturbance conditions when use is no longer needed.

**BMP-G10:** Equipment or vehicle ~~should~~ will not be washed in streams, riparian areas, or wetlands, as doing so increases sediment loads. Equipment or vehicles will be power-washed to remove weed seeds before entering federal and state listed and sensitive species habitats.

**BMP-G11:** Make sure that no servicing or refueling of equipment occurs within or immediately adjacent to wellheads, streams, reservoirs, ~~or~~ associated wetlands, or federal and state listed and sensitive species habitats.

**BMP-G16:** Enclosed containment ~~should~~ will be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials ~~should~~ will be removed to a disposal facility authorized to accept such materials."

**UDWRe Response:**

Revisions to the text were made that are acceptable to UDWRe.

**USFWS Comment 18:**

(Section 5.3.10.3.2, Page 5-414)

**Restoration and Rehabilitation Measures:**

We recommend that you modify the language for the BMPs below (adding the underlined text and removing the strikethrough text):

**"BMP-RIR2:** When rehabilitating sensitive habitats affected by project related activities, seeds from regionally native ~~or sterile non-native~~ species of grasses and herbaceous vegetation would be used in areas where reseeding is necessary to stabilize soils, prevent erosion, or providing temporary wildlife forage and/or cover. Additional plant species will be considered and approved by the appropriate land management agency or land owner prior to rehabilitation. Rehabilitation in federally listed species habitat will be compatible with recovery plans."

**UDWRe Response:**

Revisions to the text were made that are acceptable to UDWRe.



**USFWS Comment 19:**

(Section 5.3.10.3.4, Pages 5-415 and 5-416)

**Special Status Plants:** *The protection, mitigation, and enhancement measures identified in this section are not adequate for federally listed plant species that have been documented or may occur within the action area. Nevertheless, we will address conservation measures for federally listed plant species in our section 7 consultation under the ESA. At this time, we recommend that you modify the language for the BMPs below (adding the underlined text and removing the strikethrough text):*

*"BMP-SS 1: Protection of ESA listed species and designated critical habitat by avoiding ~~ance of known~~ individuals, and locations of ~~occupied~~ habitats ~~known to be occupied by ESA listed species~~ and designated critical habitat. Occupied habitat is defined as areas currently or historically known to support an ESA listed species; synonymous with "known habitat."*

**BMP-SS2:** *Special status plant species present in the area of disturbance could be salvaged and transplanted into restoration areas. Salvage and transplant of ESA listed species will be developed in consultation with the USFWS.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments Section. There are no reasonably foreseeable effects outside the area of potential effects. Therefore, the change to BMP-SS 1 suggested is not warranted.**

**USFWS Comment 20:**

(Section 5.3.10.4, Pages 5-418 to 5-420)

**Cumulative Effects:**

*This section should include the future Warner Valley Reservoir project and other associated future water projects planned by KCWCD and WCWCD if these projects are a part of the No Action Alternative since it is mentioned in section 5.3.15.4.4. Cumulative Effects, page 5-716.*

**UDWRe Response:**

**Refer to response to USFWS Comment 9 in the Chapter 5 Comments.**

**USFWS Comment 21:**

(Section 5.3.11.2.2.3, Page 5-453)

**Wildlife Population Effects:**

*We recommend an applicant committed conservation measure be incorporated that limits construction to outside of nesting season to prevent take of migratory birds. MBTA makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations.*

**UDWRe Response:**

**Section 5.3.11.3 includes:**

- Clearing of trees and other vegetation should be conducted outside of the nesting and fledging period or if performed during the nesting season as determined by AGFD and UDWR avian nesting survey would be conducted to locate active nests to be flagged for avoidance or as removed in compliance with USFWS, AGFD, or UDWR direction.

**USFWS Comment 22:**

*(Section 5.3.12.1, Page 5-463)*

***Affected Environment:***

*We recommend that you incorporate the Bald and Golden Eagle Protection Act (BGEPA), which prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 23:**

*(Section 5.3.12.1.2.2, Page 5-485)*

***Bald Eagles:***

*We recommend that you incorporate BGEPA definition of take into the bald eagle section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 24:**

*(Section 5.3.12.1.2.2, Page 5-487)*

***Golden Eagles:***

*We recommend that you incorporate BGEPA into the golden eagle section. We recommend that you evaluate effects of the Project on eagles and implement associated conservation measures (Migratory Bird Conservation Actions for Projects to Reduce the Risk of Take during the Nesting Season 2014).*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 25:**

*(Section 5.3.12.2.1.2, Page 5-495)*

***Federal, State, Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern:***

*The definition of "take" as listed in MBTA and BGEPA is different than the definition of take for ESA (see previous comments), and should be provided in this section.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 26:**

*(Section 5.3.12.2.3.1, Page 5-497)*

***Threatened, Endangered and Candidate Species, California condor:***

*We recommend that you expand the explanation for why 1,452 acres of permanent disturbance in foraging habitat won't change the food source for condors.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 27:**

*(Section 5.3.12.2.3.1, Page 5-497)*

***Threatened, Endangered and Candidate Species, California condor:***

*We recommend including applicant committed measures to reduce potential collisions, road-kill, and other garbage that would otherwise negatively affect the condor.*

**UDWRe Response:**

**The Condor is not a listed species subject to ESA mitigation requirements for this project.**

**USFWS Comment 28:**

*(Section 5.3.12.2.3.1, Page 5-498)*

***Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:***

*The document incorrectly states, "The pipeline corridor would cause permanent disturbance to a small area of potential southwestern willow flycatcher nesting habitat; however, that habitat would be immediately adjacent to Highway 89 and likely would not be utilized for nesting in the absence of the Proposed Action. The Proposed Action would not cause direct effects on the southwestern willow flycatcher." We recommend removing this statement. We recommend including an applicant committed conservation measure that precludes all activity from occurring within 1/2 mile of suitable habitat during nesting season in order to minimize effects of the project on southwestern willow flycatcher.*

**UDWRe Response:**

**Section 5.3.12.2.3.1 remains unchanged. Refer to the revised Sections 5.3.12.3.1 - General Mitigation Measures and 5.3.12.3.4 - Southwestern Willow Flycatcher in the text.**

**USFWS Comment 29:**

*(Section 5.3.12.2.3.1, Page 5-498)*

***Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:***  
*Because surveys have not been conducted since 2010, we recommend re-surveying suitable southwestern willow flycatcher habitat prior to project construction.*

**UDWRe Response:**

**Refer to revised section 5.3.12.3.4 Southwestern Willow Flycatcher in the text.**

**USFWS Comment 30:**

*(Section 5.3.12.2.3.1, Page 5-498)*

***Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:***  
*The indirect effects statement incorrectly concludes that the Project will not cause an increase in human activity. Please evaluate the effects of light, noise, and ground disturbance within 1/2 mile of suitable southwestern willow flycatcher habitat. We recommend seasonal buffers be incorporated into the project plan to minimize impacts.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section.**

**USFWS Comment 31:**

*(Section 5.3.12.2.3.1, Page 5-499)*

***Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:***  
*Please explain the changes in water flows and riparian habitat along the Virgin River as a result of this project. Please clarify if lighting or pump stations will be within 1/2 mile of suitable southwestern willow flycatcher habitat.*

**UDWRe Response:**

**The LPP Project would not measurably change water flows or riparian habitat along the Virgin River. The VRDSM results comparing the future without the LPP Project (baseline conditions) and the future with the LPP Project (Proposed Action) indicate the Virgin River flows would be approximately the same at each modeled node throughout the St. George metropolitan area. There would be no measurable effects on Virgin River riparian habitat or stream flows with the LPP Project. The LPP Project would not result in any lighting within ½ mile of suitable southwestern willow flycatcher habitat.**

**USFWS Comment 32:**

*(Section 5.3.12.2.3.1, Page 5-499)*

***Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:***  
*Without further clarification and information, we cannot agree with a no effect finding for the southwestern willow flycatcher.*

**UDWRe Response:**

**Your comment has been noted.**

**USFWS Comment 33:**

(Section 5.3.12.2.3.2, Page 5-506)

**Wildlife Species of Concern, Birds:**

*The document states that nests with eggs or young may be destroyed by construction. Please reference the Migratory Bird Treaty Act (MBTA) definition of take. Taking of eggs or young is not permitted under MBTA. We recommend that you incorporate MBTA and Bald and Golden Eagle Protection Act (BGEPA) definitions into your document and add applicable conservation measures (Migratory Bird Conservation Actions for Projects to Reduce the Risk of Take during the Nesting Season 2014). We recommend that you follow guidance outlined in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002).*

**UDWRe Response:**

**The text has been revised to address the comments.**

**USFWS Comment 34:**

(Section 5.3.12.2.3.2, Page 5-506)

**Wildlife Species of Concern, Birds:**

*Please evaluate the increase in traffic to pump stations or hydro stations and the potential effects of increased traffic on migratory birds.*

**UDWRe Response:**

**The increase in project operations traffic to pump stations and hydro stations is addressed in the Transportation study report. The average visits to each facility site would be 2 each week. This level of traffic is expected to have minor effects on migratory birds.**

**USFWS Comment 35:**

(Section 5.3.12.2.3.2, Page 5-507)

**Wildlife Species of Concern, Birds:**

*Please explain the increase in traffic due to the project. We recommend incorporating measures, such as speed limits, to reduce direct collisions with birds and other road kill that would attract scavengers.*

**UDWRe Response:**

**Long term increases in traffic are expected to be minimal. Speed limits will be incorporated during construction to address the issues described in the comment.**

**USFWS Comment 36:**

(Section 5.3.12.2.4.1, Page 5-509)

**Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:**

*This section states that the existing highway alternative may affect, but is not likely to adversely affect southwestern willow flycatcher. However, it states that the effects are the same as Section 5.3.12.2.3.1. Section 5.3.12.2.3.1 states that there is no effect to the species. Please correct the statements so they are accurate.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**USFWS Comment 37:**

*(Section 5.3.12.2.6.1, Page 5-517)*

***Threatened, Endangered and Candidate Species, California condor:***

*We appreciate the Project proponents adhering to the provisions of the Avian Protection Plan jointly produced by the Edison Electrical Institute and USFWS. During Section 7 consultation, we recommend FERC incorporate the specific provisions that apply to the Project as applicant-committed measures to reduce incidental take of California condors.*

**UDWRe Response:**

**The Condor is not a listed species subject to ESA mitigation requirements for this project.**

**USFWS Comment 38:**

*(Section 5.3.12.2.6.1, Page 5-517)*

***Threatened, Endangered and Candidate Species, California condor:***

*We appreciate the documentation of indirect effects from increased access from Project actions.*

**UDWRe Response:**

**Your comment has been noted.**

**USFWS Comment 39:**

*(Section 5.3.12.2.6.1, Page 5-518)*

***Threatened, Endangered and Candidate Species, Southwestern Willow Flycatcher:***

*Please provide information regarding the presence of suitable habitat within 1/2 mile of the Electrical Transmission Lines System.*

**UDWRe Response:**

**The 2010 avian surveys did not document suitable Southwestern willow flycatcher habitat – the Paria River is documented as having the potential to produce viable habitat with management.**

**USFWS Comment 40:**

*(Section 5.3.12.3.2, Page 5-527)*

***Protection, Mitigation and Enhancement Measures, California condor:***

*We recommend a 1-mile buffer around condor nests. We recommend other conservation measures be taken to reduce impacts (i.e. implementing speed limits to minimize direct collisions and road kill-please list the speed limits, educating staff about general biology of the bird and informing USFWS if condors are seen within active construction sites). We recommend "re-introduction team" be replaced by USFWS.*

**UDWRe Response:**

**The Condor is not a listed species subject to ESA mitigation requirements for this project.**

**USFWS Comment 41:**

*(Section 5.3.14.2.10, Page 5-649)*

***Growth:***

*The bulleted statement needs to be supported with an adequate evaluation of induced growth and development from the proposed action and the appropriate citation. We recommend that you provide both in this section and discuss in detail within all subsections. There may be areas within designated municipal boundaries that are undeveloped where induced growth will occur.*

**UDWRe Response:**

**There is no section 5.3.14.2.10 in the report. To the extent this comment applies to section 5.3.14.2.1.10 on page 5-641 or another section, refer to the response to USFWS Comment 1 in the General Comments section. Note that section 5.3.14.2.1.10 is a statement of significance criteria similar to the sections immediately preceding it.**

**USFWS Comment 42:**

*(Section 5.3.14.2.2.2, Page 5-652)*

***Farmland:***

*We recommend that you provide a citation and supporting documentation for the NRCS evaluation of the Project areas.*

**UDWRe Response:**

**The NRCS citation has been added to the Land Use Plans and Conflicts Study Report.**

**USFWS Comment 43:**

*(Figure 5-185, Page 5-653)*

*We recommend the figure be revised to depict all of the action area. The figure excludes the western portion of the action area in Washington County.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section. Depiction of areas with prime farmland soils beyond the area already described is not warranted because there are no reasonably foreseeable effects to such land.**

**USFWS Comment 44:**

*(Section 5.3.14.2.2.10, Page 5-665)*

***Growth:***

*You should include an evaluation of the effects of future growth and development to threatened and endangered species and their critical habitat. We are concerned that analysis of induced*



*growth from the proposed alternatives is inadequate for federal reviews because it fails to address indirect effects of the Project that may substantially affect threatened and endangered species and other wildlife resources. We specifically addressed the same concern in our comment letter dated May 9, 2011 regarding the DSR #6 exclusion of threatened and endangered species habitat from future development scenarios. We recommend that you include threatened and endangered species critical habitat areas in your future growth and development area evaluation.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in the General Comments section.**

**USFWS Comment 45:**

*(Section 5.3.14.4, Page 5-687)*

***Cumulative Effects:***

*This section should include the future Warner Valley Reservoir project and other associated future water projects planned by KCWCD and WCWCD if these projects are a part of the no action alternative, since it is mentioned in section .5.3.15.4.4. Cumulative Effects, page 5-716.*

**UDWRe Response:**

**Refer to response to USFWS Comment 9 in the Chapter 5 comments.**

**Kaibab Tribe Comment 1:**

*(Section 5.2.3.1)*

*This section states that "Indian Reservations were established in the region between 1913 and 1917." PLP at 5-18. The Department established the Kaibab Indian Reservation in 1907, however, when it withdrew certain lands "for the use of the Kaibab and other Indians." See Letter from C. F. Larrabee, Acting Comm'r, Dep't of Interior, Office of Indian Affairs, to Sec'y of Interior at 1 (Oct. 15, 1907), approved by Thomas Ryan, First Assistant Sec'y (Oct. 16, 1907). The 1913 and 1917 Executive Orders that the UBWR is apparently referencing merely gave formal sanction to the Department's 1907 withdrawal. See *United States v. Walker River Irrigation Dist.*, 104 F.2d 334, 338-39 (9th Cir. 1939) (Executive Order issued fifteen years after Department withdrew lands for Walker River Indian Reservation merely gave formal sanction to prior act, so Reservation was established when land was first withdrawn). Thus, the UBWR must correct this section so that the final PLP indicates that the Kaibab Indian Reservation was first established in 1907.*

*This section also ignores the pre-existence of Indian people in the region by stating that the historic period "began with early exploration by Spanish explorers." PLP at 5-18. The final PLP should clarify that this was the beginning of Post-Columbian, European-American history in the region, which was preceded by the presence of Indian people in the area since time immemorial.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**The general history on the KPIR has been revised in Final Study Report 03 – Archeological and Historic-Era Resources. (Refer to page 3-104, 3.3.5.1.2 Kaibab Paiute Indian Reservation). If a more detailed history of the KPIR, UDWR will need to go through the Tribe to gain access to the information or even have the tribe write it.**

**Kaibab Tribe Comment 2:**

*(Section 5.2.3.10)*

*The UBWR states that the West-Wide Energy Corridor Final Programmatic EIS may have cumulative effects on "Land Use Plans and Conflicts" when combined with the effects of the Lake Powell Pipeline Project. PLP at 5-26. The UBWR does not list any other resources that are potentially subject to such cumulative effects. However, any pipeline construction, operation, and maintenance within the Navajo-McCullough Transmission Line Corridor to the south of the Kaibab Indian Reservation also has the potential to cause cumulative effects on archaeological resources, TCPs, visual resources, air quality, and other resources of importance to the Kaibab Tribe. In addition to the potential for cumulative effects to land use plans and conflicts, the PLP must acknowledge and fully consider cumulative effects to other resources as well.*

**UDWR Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 3:**

*(Section 5.3)*

*This section summarizes the UBWR's conclusions on the potential effects to each resource topic from the revised draft study reports, but like the revised draft study reports it fails to properly consider and account for the Kaibab Tribe's significant concerns regarding the Lake Powell Pipeline Project. Below, the Kaibab Tribe provides comments on each resource topic in the same order set forth in the PLP.*

**UDWR Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 4:**

*(Section 5.3.1)*

*The UBWR took the information and conclusions in this section from the revised draft study report on geology and soil resources - but as stated in the Kaibab Tribe's comments below on the individual study reports, that report is incomplete because it fails to address the Kaibab Tribe's significant concerns about the potential effects on TCPs and other topics. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP - and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns.*

**UDWR Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 5:**  
(Section 5.3.1.1.8)

*In addition to important structures and mineral resources, the UBWR must also document and consider effects to TCPs within the area of potential effect. The PLP does not document any effects on TCPs.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 6:**  
(Section 5.3.1.2.1)

*The UBWR applies significance criteria to certain impact topics taken from Study Plan 4, PLP at 5-68 to -70, including impacts to important structures, id. at 5-70 - but does not apply the criteria or consider the potential impacts to TCPs that are of concern to the Kaibab Tribe. The PLP must consider the potential impacts to TCPs and apply the significance criteria to such impacts.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 7:**  
(Section 5.3.1.2.2.6)

*The UBWR states that structures within 1,000 feet of construction activity for the Proposed Action will be at risk of damage from blasting during trenching. PLP at 5-71. The UBWR does not mention or describe the potential for similar effects on TCPs. however. The final PLP must describe such effects and include appropriate avoidance and mitigation measures.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 8:**  
(Section 5.3.1.2.4.6)

*The UBWR states that structures within 1,000 feet of construction activity for the Existing Highway Alternative will be at risk of damage from blasting during trenching. PLP at 5-75. The UBWR does not mention or describe the potential for similar effects on TCPs. however. The final PLP must describe such effects and include appropriate avoidance and mitigation measures.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 9:**

*(Section 5.3.1.2.6)*

*The UBWR states that construction effects for the Southeast Comer Alternative will be the same as those described for the Proposed Action. PLP at 5-76. As mentioned above, however, the UBWR does not describe the potential for damage to TCPs in its discussion of the Proposed Actions effects. Again, the final PLP must describe such effects and include appropriate avoidance and mitigation measures.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 10:**

*(Section 5.3.1.3.4)*

*The UBWR states that special blasting measures will be employed to minimize the potential for damage to important structures, PLP at 5-80, but it does not describe any protection measures for TCPs. The final PLP must describe such protection measures.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 11:**

*(Section 5.3.3)*

*The UBWR took the information and conclusions in this section from the revised draft study report on surface water resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include important modeling results, see PLP at P-2, and fails to address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 12:**

*(Section 5.3.4)*

*The UBWR took the information and conclusion in this section from the revised draft study report on surface water quality, but as stated in the Kaibab Tribe's comments on the*

*individual study reports, that report is incomplete because it does not include important modeling results from the Bureau of Reclamation ("Reclamation"), see PLP at P-2, and fails to address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns, and to fill in the substantial informational gaps.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 13:**

*(Section 5.3.5)*

*The UBWR took the information and conclusions in this section from the revised draft study report on groundwater resources, but as stated in the Kaibab Tribe's comments on the individual study reports that report fails to address the Kaibab Tribe's significant concerns.*

*Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 14:**

*(Section 5.3.6)*

*The UBWR took the information and conclusions in this section from the revised draft study report on aquatic resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include important modeling results from the Reclamation, see PLP at P-2, and does not address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns, and to fill in the substantial informational gaps.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 15:**

*(Section 5.3.6.1.6.2)*

*The UBWR does not acknowledge or account for the Paria River Management Plan, as is required, in its discussion of the Paria River drainage. See PLP at 5-252 to -55. The final PLP must consider the requirements of the Paria River Management Plan.*

**UDWRe Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 16:**

*(Section 5.3.6.1.6.3)*

*The UBWR states that the lower reach of Kanab Creek running through the Kaibab Indian Reservation does not support recreation or any aquatic resources. PLP at 5-255. Nor does the UBWR identify any management plans for Kanab Creek or consider aquatic non-fish species. See id. at 5-255 to -57. The UBWR must adequately support its conclusions regarding aquatic resources in lower Kanab Creek, identify any available management plans for Kanab Creek, and consider non-fish aquatic species.*

**UDWRe Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 17:**

*(Section 5.3.6.1.6.5)*

*The UBWR notes the existence of the Virgin River Resource Management and Recovery Plan, PLP at 5-259, but does not discuss details of that program or consider how the pipeline may affect its objectives. The final PLP must include details about the Virgin River Resource Management and Recovery Plan and fully consider the Plan's objectives.*

**UDWRe Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 18:**

*(Section 5.3.6.2)*

*After applying the significance criteria, the UBWR concludes that none of the pipeline project alternatives would have significant effects on aquatic resources. PLP at 5-259 to -61. The UBWR cannot reach this conclusion until it describes the locations of all outlets and valves along the pipeline route, which it has not done. The final PLP must include a description of all pipeline outlets and valves before the UBWR can conclude that the pipeline will not have significant environmental effects on aquatic resources.*

**UDWRe Response:**

**The locations of drain valves and their outlets cannot be determined at this point in time. The anticipated method of operating the drain valves and thus the anticipated discharges into their outlets enable UDWRe to conclude that none the pipeline alternatives would have a significant effect on aquatic resources.**

**Kaibab Tribe Comment 19:**

*(Section 5.3.6.4)*

*The UBWR concludes that none of the pipeline alternatives would have measurable*

*cumulative effects on aquatic resources when combined with past, present, and future interrelated actions, PLP at 5-263, but the UBWR cannot make this conclusion without first knowing the location of all outlets and valves along the pipeline. The final PLP must include a description of all pipeline outlets and valves before the UBWR can conclude that the pipeline will not have any measurable cumulative effects.*

**UDWRe Response:**

**The locations of drain valves and their outlets cannot be determined at this point in time. The anticipated method of operating the drain valves and thus the anticipated discharges into their outlets enable UDWRe to conclude that none the pipeline alternatives would have a significant effect on aquatic resources.**

**Kaibab Tribe Comment 20:**

*(Section 5.3.7)*

*The UBWR took the information and conclusions in this section from the revised draft study report on special status aquatic species, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include important modeling results from Reclamation, see PLP at P-2, and does not address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 21:**

*(Section 5.3.7.1.1)*

*The UBWR identifies aquatic species listed by the United States Forest Service under the Endangered Species Act, PLP at 5-266 & tbl. 5-76, and describes the listing history, distribution, life history, and designated critical habitat of each aquatic species. Id. at 5-267 to -76. The UBWR also identifies and describes the aquatic species of concern to federal, state, and local agencies. Id. at 5-276 to -79. The UBWR does not identify any aquatic species of specific concern to the Kaibab Tribe, however, or describe its efforts to consult with the Kaibab Tribe on this matter. The final PLP must indicate which aquatic species are of specific concern to the Kaibab Tribe and describe the UBWR's efforts to consult with the Kaibab Tribe on this resource topic.*

**UDWRe Response:**

**Numerous attempts were made to consult with the Kaibab Tribe on aquatic species of specific concern but such attempts were not successful.**

**Kaibab Tribe Comment 22:**

*(Section 5.3.7.3)*



*The UBWR concludes that the pipeline project would have no measurable effect on any aquatic species of concern to federal, state, and local agencies, so it does not identify any protection, mitigation, or enhancement measures for implementation. PLP at 5-293. This contrasts with the conclusions reached in an earlier draft of the study report on special status aquatic species, which concluded that certain effects were possible. The final PLP must document and explain the UBWR's change of opinion on the potential effects to special status aquatic species.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 23:**

*(Section 5.3.8)*

*The UBWR took the information and conclusions in this section from the revised draft study report on vegetation communities, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP and revised draft study reports to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**The Tribe's Plants of Cultural Concern were surveyed for along with the other special status species. The Tribe's provision of the survey results are provided in Section 5.3.10.1.3 of the text.**

**Kaibab Tribe Comment 24:**

*(Section 5.3.8.1.1)*

*The UBWR identifies numerous ecological systems and vegetation communities within the project area, PLP at 5-297 to -329 & tbl. 5-79, but does not identify any plants of cultural concern to the Kaibab Tribe or describe its efforts to engage in tribal consultation on this matter. The final PLP must identify plants of cultural concern to the Kaibab Tribe and describe the UBWR's efforts to consult with the Kaibab Tribe.*

**UDWRe Response:**

**The Tribe's Plants of Cultural Concern were surveyed for along with the other special status species. The Tribe's provision of the survey results are provided in Section 5.3.10.1.3 of the text.**

**Kaibab Tribe Comment 25:**

*(Section 5.3.8.2)*

*The UBWR describes the potential effects on vegetation communities, PLP at 5-329 to 31, but unlike with other resource topics, it does so without describing or applying any significance criteria. As with other resource topics, the final PLP must describe and apply significance criteria.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 26:**

*(Section 5.3.9)*

*The UBWR took the information and conclusions in this section from the revised draft study report on wetlands and riparian resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP and revised draft study reports to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 27:**

*(Section 5.3.9.1.3.5)*

*The UBWR indicates that it installed a scour chain at Two Mile Wash on the Kaibab Indian Reservation, but does not say whether it obtained tribal permission prior to doing so. PLP at 5-342 to -43. The final PLP should indicate whether it obtained tribal permission prior to installing a scour chain at Two-Mile Wash on the Kaibab Indian Reservation.*

**UDWRe Response:**

**Permission was obtained from the tribe to install the scour chain.**

**Kaibab Tribe Comment 28:**

*(Section 5.3.9.1.3.6)*

*The UBWR indicates that it installed a scour chain at Cottonwood Wash on the Kaibab Indian Reservation, but does not say whether it obtained tribal permission prior to doing so. PLP at 5-343. The final PLP should indicate whether it obtained tribal permission prior to installing a scour chain at Cottonwood Wash on the Kaibab Indian Reservation.*

**UDWRe Response:**

**Permission was obtained from the tribe to install the scour chain.**

**Kaibab Tribe Comment 29:**

*(Section 5.3.10)*

*The UBWR took the information and conclusions in this section from the revised draft study report on special status plant species and noxious weeds assessments, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP and revised draft study reports to the UBWR for revisions that adequately address tribal concerns, and fill in the substantial informational gaps.*

**UDWRe Response:**

**The study report on special status plant species and noxious weeds provides survey results and a preliminary evaluation of potential project impacts; information on mitigation, unavoidable adverse impacts, and cumulative impacts is provided in Chapter 5 of the PLP. The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the text and Final Study Report 12 – Special Status Plant Species.**

**Kaibab Tribe Comment 30:**

*(Section 5.3.10.1.1)*

*The UBWR identifies numerous plant species with the potential to occur within the area of potential effect. PLP at 5-357 to -60 & tbl. 5-94. Although the Kaibab Tribe provided the UBWR with a list of plants of cultural concern, the PLP does not mention this fact or indicate which plants were identified by the Kaibab Tribe. The final PLP must include this information and consider potential effects to plants of cultural concern to the Kaibab Tribe.*

**UDWRe Response:**

**The Tribe's Plants of Cultural Concern were surveyed for along with the other special status species. The Tribe's provision of the survey results are provided in Section 5.3.10.1.3 of the text.**

**Kaibab Tribe Comment 31:**

*(Section 5.3.10.2.1)*

*The UBWR concludes that the Proposed Action would have short-term effects on nine plant species, including eight sensitive species on federal and state plant lists. PLP at 5-410. The UBWR does not mention the Kaibab Tribe's list of plants of cultural concern, however, or indicate whether any of the eight sensitive plants were included on the Kaibab Tribe's list. The*

*final PLP must take the Kaibab Tribe's list of plants of cultural concern into account and consider the potential effects on plants found on that list.*

**UDWRe Response:**

**The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the text and Final Study Report 12 – Special Status Plant Species.**

**Kaibab Tribe Comment 32:**

*(Section 5.3.10.2.2)*

*The UBWR concludes that the Proposed Action would have short-term effects on eleven plant species, including ten sensitive species on federal and state plant lists. PLP at 5-411. The UBWR does not mention the Kaibab Tribe's list of plants of cultural concern, however, or indicate whether any of the ten sensitive plants were included on the Kaibab Tribe's list. The final PLP must take the Kaibab Tribe's list of plants of cultural concern into account and consider the potential effects to plants found on that list.*

**UDWRe Response:**

**The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the PLP and the revised Study Report 12.**

**Kaibab Tribe Comment 33:**

*(Section 5.3.11)*

*The UBWR took the information and conclusions in this section from the revised draft study report on wildlife resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP and revised draft study reports to the UBWR for revisions that adequately address tribal concerns and to fill in the substantial informational gaps.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 34:**

*(Section 5.3.11.1)*

*The UBWR identifies various wildlife habitats and populations within the area of potential effect. PLP 5-432 to -48. However, the UBWR does not mention or take into account wildlife habitats and species of cultural concern to the Kaibab Tribe. The UBWR must consult with the Kaibab*

*Tribe on this matter and the final PLP must consider effects to wildlife habitats and species of tribal concern.*

**UDWRe Response:**

**Section 2.2 of Final Study Report 21 - Wildlife Resources states:**

**“... wildlife data were used from the Utah Division of Wildlife Resources Conservation Data Center (Utah Division of Wildlife Resources 2010), the Utah GIS Portal (AGRC 2010), the Arizona Game and Fish Department Natural Heritage Program Data Management System (AGFD 2010), NatureServe (NatureServe 2010), Kaibab Band of Paiute Indians, Wildlife Species of Cultural Concern, and standard field guides for wildlife species...”**

**Kaibab Tribe Comment 35:**

*(Section 5.3.12)*

*The UBRW took the information and conclusions in this section from the revised draft study report on special status wildlife species, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP and revised draft study reports to the UBRW for revisions that adequately address tribal concerns and to fill in the substantial informational gaps.*

**UDWRe Response:**

**Refer to Final Study Report 13 – Special Status Wildlife Species and Chapter 5 of the text.**

**Kaibab Tribe Comment 36:**

*(Section 5.3.12.1)*

*The UBRW states that wildlife species of cultural concern to the Kaibab Tribe are analyzed in other PLP subsections, PLP at 5-463, but as described below the UBRW declines to individually analyze the categories of wildlife of concern to the Kaibab Tribe. The final PLP must give greater consideration to tribal wildlife species of cultural concern.*

**UDWRe Response:**

**Effects are determined for sensitive species and wildlife species of concern by species grouping composed of mammals, birds, reptiles, amphibians and tribal wildlife species of cultural concern for each alternative.**

**Kaibab Tribe Comment 37:**

*(Section 5.3.12.1.2)*

*The UBRW lists the wildlife species of concern to federal and state agencies, PLP at 5- 474 to -77 & tbl. 5-112, and then divides them into two categories: (I) species that do not have a potential*

*project nexus, id. at 5-477 to -81 & tbl. 5-113; and (2) species that do have a potential project nexus. Id. at 5-482 to -93. Certain inconsistencies exist within these mutually exclusive categories, however. For example, the Leconte's thrasher, Lewis's woodpecker, and northern goshawk are highlighted in table 5-112, id. at 5-476, indicating that these species do have a potential project nexus, but they are also included in the list of species that do not have a potential project nexus. Id. at 5-480 to -81. Each species also appears in section 5.3.12.1.2.2, which only describes the species of concern with a potential project nexus. Id. at 5-487 to -88. Further, whereas the UBWR stated that there is no occurrence or nesting of the Leconte's thrasher, Lewis's woodpecker, and northern goshawk in the area of potential effect, id. at 5-480 to -81, the UBWR subsequently stated that the Lewis's woodpecker and Northern goshawk may nest in certain portions of the area of potential effect. Id. 5-487 to 88. The UBWR made contradictory statements that the final PLP must clarify and correct.*

**UDWRe Response:**

**Tables and text have been revised to address the comment.**

**Kaibab Tribe Comment 38:**

*(Section 5.3.12.1.2.3)*

*The UBWR lists the species of cultural concern to the Kaibab Tribe, but it generally dismisses tribal concerns because the Kaibab Tribe did not provide specific species designations. PLP at 5-493 & tbl. 5-114. The UBWR states that there is "some" overlap between the tribal wildlife species of cultural concern and the species listed by federal and state agencies, so it declines to conduct any meaningful analysis of species identified by the Kaibab Tribe. Id. The UBWR's approach is inadequate and does not account for the categories of wildlife not included on the federal and state lists. The final PLP must give proper consideration to each category of wildlife identified by the Kaibab Tribe as culturally important.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 36.**

**Kaibab Tribe Comment 39:**

*(Section 5.3.13)*

*The UBWR took the information and conclusions in this section from the revised draft study report on recreation resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include important modeling results, see PLP at P-2, and does not address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**The text has been revised to address this comment.**

**Kaibab Tribe Comment 40:**  
(Section 5.3.13.1.2.7)

*The UBRW states that no recreation needs relevant to the pipeline project have been identified for the Kaibab Indian Reservation, PLP at 5-577, but it does not indicate how it made this conclusion or whether it consulted with the Kaibab Tribe on this issue. The final PLP must support the UBRW's conclusion and describe the UBRW's attempts to consult with the Kaibab Tribe on this issue.*

**UDWR Response:**

**UDWR's view is that that the text is correct as written.**

**Kaibab Tribe Comment 41:**  
(Section 5.3.13.2.2.3)

*The UBRW concludes that there will be no direct effects from pipeline construction activities for the Existing Highway Alternative on recreation resources at the Kaibab Tribe Campground and RV Park, but concludes that minor indirect effects from residual air pollutants may occur. PLP at 5-600. The UBRW does not consider the impacts of construction traffic and noise on these recreational facilities, however, as it did with recreation at Pipe Spring National Monument located within the Kaibab Indian Reservation. See id. at 5-601. In addition to considering air pollutant impacts, the final PLP must consider the impacts of construction traffic and noise on recreational visitors to the Kaibab Tribe Campground and RV Park, as it did with other recreation resources.*

**UDWR Response:**

**The text has been revised to address this comment.**

**Kaibab Tribe Comment 42:**  
(Section 5.3.13.3)

*The UBRW lists protection, mitigation, and enhancement measures for the pipeline project to be implemented during the construction, operation, and maintenance of the pipeline. PLP at 5-615 to -16. The UBRW does not say whether it consulted with the Kaibab Tribe in developing these measures, however. The UBRW must consult with the Kaibab Tribe regarding these measures as they pertain to construction and operation activities on the Kaibab Indian Reservation, and the final PLP must describe tribal consultations regarding this matter.*

**UDWR Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 43:**  
(Section 5.3.13.5.2.1)



*The UBWR states that air pollutants and increased traffic would be unavoidable adverse effects to recreation users at Pipe Spring National Monument during construction of the Existing Highway Alternative, but does not mention the Kaibab Tribe Campground and RV Park or consider whether the same unavoidable adverse effects to recreation users would also apply to tribal facilities. PLP at 5-620. The final PLP must consider the unavoidable adverse effects to the Kaibab Tribe Campground and RV Park, and must also include the effects of construction noise on recreation users.*

**UDWRe Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 44:**

*(Section 5.3.14)*

*The UBWR took the information and conclusions in this section from the revised draft study report on land use plans and conflicts, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it fails to address the Kaibab Tribe's significant concerns regarding TCPs and other topics. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 45:**

*(Section 5.3.14.1.2)*

*The UBWR lists and describes numerous topics that are generally associated with land management plans and policies, including national historic trails and areas of critical environmental concern, PLP at 5-624 to -44, but it does not mention other historic properties such as TCPs. The final PLP must state that all historic properties, including TCPs, are generally associated with land management plans and policies.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 46:**

*(Section 5.3.14.1.2.1)*

*The UBWR claims it contacted the Kaibab Tribe for the purpose of obtaining a tribal resource management plan, and that the Economic Development/Resource Manager for the Kaibab Tribe anticipated completing such a plan in 2013. PLP at 5-628. The UBWR offers no further details*

*and does not describe any attempts to follow up with the Kaibab Tribe on this matter. The final PLP must include follow-up information such as whether the UBWR made further attempts to obtain a tribal resource management plan and whether it ever obtained such a plan.*

*The UBWR also states that "a tribe may require that future right-of-way applicants locate their proposed project in a designated energy transport corridor." Id. The UBWR does not state that the inverse is also true, specifically that an Indian tribe may determine not to require that a right-of-way be located within a designated energy corridor. The UBWR should remove this general statement or clarify that a right-of-way across tribal lands need not be located within a designated energy transport corridor.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 47:**

*(Section 5.3.14.2.1)*

*The UBWR develops significance criteria for each of the topics it determined is generally associated with land management plans and policies, including national historic trails. PLP at 5- 648 to -49. The UBWR then applies the criteria to each topic under each of the pipeline alternatives. Id. at 5-649 to -82. The UBWR does not develop and apply significance criteria to any other type of historic property, such as TCPs which are of importance to the Kaibab Tribe. The final PLP must include significance criteria for all historic properties, including TCPs, and the UBWR must apply the criteria to TCPs within the area of potential effect.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 48:**

*(Section 5.3.14.3)*

*The UBWR describes various protection, mitigation, and enhancement measures for each land topic it determined was generally associated with land management plans and policies, including national historic trails, PLP at 5-682 to -86, but it does not describe similar measures for historic properties such as TCPs. The final PLP must contain protection, mitigation, and enhancement measures for all historic properties, not just national historic trails, and including TCPs.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 49:**

*(Section 5.3.14.5)*

*The UBWR describes unavoidable adverse effects under each pipeline alternative for each of the topics it determined was generally associated with land management plans and policies, PLP at 5-689 to -90, but it does not analyze the unavoidable adverse effects to other historic properties such as TCPs. The final PLP must consider the unavoidable adverse effects to TCPs and other historic properties.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 50:**

*(Section 5.3.15)*

*The UBWR took the information and conclusions in this section from the revised draft study report on transportation, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it fails to address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns.*

**UDWRe Response:**

**The comment has been noted.**

**Kaibab Tribe Comment 51:**

*(Section 5.3.15.1.2.2)*

*The UBWR states that typical rights-of-way for the pipeline project would cross "federal, state, county, city, and private lands in the area of potential effect." PLP at 5-705. The UBWR does not mention tribal lands, however. The final PLP must acknowledge that a right-of-way across Kaibab lands will also be required for construction of the Existing Highway Alternative.*

**UDWRe Response:**

**Tribal lands were included in the text regarding transportation ROWs.**

**Kaibab Tribe Comment 52:**

*(Section 5.3.15.2.2.3)*

*The UBWR states that implementing the pipeline project in conflict with federal, state, and local resource management goals would be a significant effect. PLP at 5-713. The UBWR does not mention tribal resource management goals. The final PLP must consider tribal resource management goals and describe the UBWR's efforts to obtain that information.*

**UDWRe Response:**

**Tribal management goals are included in the text as a significant effect.**

**Kaibab Tribe Comment 53:**

*(Section 5.3.15.3.1)*

*The UBWR states it would coordinate with federal, state, and local agencies to acquire the required permits for traffic controls and lane closures during pipeline construction activities.*

*PLP at 5-716. The UBWR must also coordinate with the Kaibab Tribe to obtain the necessary permits for any construction activities on tribal lands. The final PLP must acknowledge this fact.*

**UDWRe Response:**

**Tribal coordination for permits and construction activities on tribal land is incorporated into the text.**

**Kaibab Tribe Comment 54:**

*(Section 5.3.16)*

*The UBWR took the information and conclusions in this section from the revised draft study report on visual resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns regarding TCPs and other topics. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP and revised draft study reports to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 55:**

*(Section 5.3.16.1.1.2)*

*The UBWR describes the general area of the project and mentions various scenic overlooks, important natural features, historic trailheads, and interpretive sites, among other features, PLP at 5-720 to -22, but it does not mention the presence of TCPs such as visual landscapes in the area of potential effect that are of cultural significance to the Kaibab Tribe. The final PLP must consider the presence of visual landscapes in the area of potential effect that are of cultural importance to the Kaibab Tribe.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 56:**

(Section 5.3.16.1.1)

*The UBWR vaguely describes the area of potential effect in terms of the regional setting and cultural context, PLP at 5-719 to -22, but says nothing about the presence of visual landscapes that are of significant cultural importance to the Kaibab Tribe. Further, the UBWR does not account for the two-mile-wide area of potential effect established by the Commission for "historic properties or other culturally important sites, including any visual, audible, or air quality types of project-related effects." Letter from Timothy J. Welch, Chief, Hydro West Branch 2, Fed. Energy Regulatory Comm'n, to Eric Millis, Utah Div. of Water Res., Attachment A (May 7, 2009). The final PLP must account for the presence of visual landscapes within the area of potential effect that are of cultural importance to the Kaibab Tribe.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 57:**

(Section 5.3.16.1.2.1)

*The UBWR defines the foreground distance zone as the area up to 0.5 miles from the pipeline project, and the middleground distance zone as the area within 0.5 to 5.0 miles from the project. PLP at 5-722. However, the visual resources study plan defined the foreground zone as the area within 0.75 miles of the pipeline project. See 2012 Comments at 9; 2011 Comments at 41. The final PLP must clarify this inconsistency.*

**UDWRe Response:**

**The text has been revised to eliminate the inconsistency.**

**Kaibab Tribe Comment 58:**

(Section 5.3.16.1.5)

*The UBWR discusses several historic trails within the area of potential effect, PLP at 5- 733 to -35, but it does not discuss other historic properties such as TCPs and visual landscapes that are of significant cultural importance to the Kaibab Tribe. The final PLP must account for and address visual landscapes that are of cultural importance to the Kaibab Tribe.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 59:**

(Section 5.3.16.2)

*The UBWR states that "effects on visual resources were evaluated in terms of their overall direct and indirect effects, as well as their specific effects on scenic roads and byways and historic trails." PLP at 5-736. The UBWR does not mention effects on visual landscapes that are of*

*significant cultural importance to the Kaibab Tribe. The final PLP must address effects to TCPs such as visual landscapes.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 60:**

*(Section 5.3.16.2.1)*

*The UBWR develops significance criteria involving effects within the foreground zone. PLP at 5-736. The definition of the foreground zone as the area within 0.5 miles of the pipeline project differs from the definition of the foreground zone in Study Plan 16, however. See 2012 Comments at 11; 2011 Comments at 42. The final PLP must clarify this inconsistency.*

*Moreover, the Commission established a two-mile-wide area of potential effect for "historic properties or other culturally important sites, including any visual, audible, or air quality types of project-related effects." Letter from Timothy J. Welch, Chief, Hydro West Branch 2, Fed. Energy Regulatory Comm'n, to Eric Millis, Utah Div. of Water Res., Attachment A (May 7, 2009). The final PLP must account for effects within the two-mile wide area that is significantly larger than the foreground zone.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 61:**

*(Section 5.3.16.2.3.6)*

*The UBWR examines indirect effects on several historic trails within the area of potential effect. PLP at 5-749 to -50. The UBWR does not examine effects to visual landscapes that are of significant cultural importance to the Kaibab Tribe, however. The final PLP must look at both the direct and indirect effects on visual landscapes that are of cultural importance to the Kaibab Tribe.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 62:**

*(Section 5.3.16.3.1.1)*

*The UBWR identifies numerous protection and mitigation measures to be implemented during construction of the Proposed Action. PLP at 5-772 to -74. None of the protection and mitigation measures are specific to TCPs such as visual landscapes, however. The UBWR must coordinate and consult with the Kaibab Tribe to develop protection and mitigation measures for culturally significant visual landscapes, and the final PLP must include such measures.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 63:**

*(Section 5.3.16.4.1)*

*The UBWR identifies five other actions for the purpose of examining any cumulative effects with the Proposed Action. PLP at 5-775. In contrast, in early versions of the visual resources draft study report, the UBWR identified six different actions with the potential to have cumulative impacts with the pipeline project: Southern Corridor Highway, Jackson Flat Reservoir, Anderson Junction Reservoir, Ash Creek Pipeline, Kem River-Hurricane Natural Gas Pipeline, and federal resource management plans for local National Conservation Areas.*

*Modified Draft Study Report 16: Visual Resources at 7-1 (Jan. 27, 2012) ("Modified Study Report 16"). Without explanation, none of these six projects is identified in the PLP for the cumulative effects analysis. The UBWR must explain why the six original projects are no longer considered to have the potential for cumulative effects, and the final PLP must include detailed information about whichever actions are ultimately included in this section.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 64:**

*(Section 5.3.17)*

*The UBWR took the information and conclusions in this section from the revised draft study report on air quality, but as stated in the Kaibab Tribe's comments on the individual study reports, that study report is incomplete because it fails to address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns.*

**UDWRe Response:**

**The Kaibab Tribe comments have been reviewed, responded to as deemed appropriate, and noted.**

**Kaibab Tribe Comment 65:**

*(Section 5.3.17.1.1)*

*The UBWR describes the area of potential effect in general terms, and notes the presence of "areas of possible cultural sensitivity." PLP at 5-779. The final PLP must include a detailed and precise description of the area of potential effect, and should account for the two-mile-wide area of potential effect for "historic properties or other culturally important sites, including any visual, audible, or air quality types of project-related effects." Letter from Timothy J. Welch, Chief, Hydro West Branch 2, Fed. Energy Regulatory Comm'n, to Eric Millis, Utah Div. of Water Res.,*



*Attachment A (May 7, 2009). In addition, areas of cultural sensitivity do, in fact, exist within the area of potential effect, so the UBWR must remove the term "possible" to describe such areas.*

**UDWRe Response:**

**Nearly all NAAQS are met within the right of way of the construction if not slightly outside of the construction boundary which is well within the the area of potential impact as stated above.**

**Kaibab Tribe Comment 66:**

*(Section 5.3.17.1.2.4)*

*The UBWR states that it had "direct contacts with ADEQ and UDEQ staff and other officials," making no mention of any contacts with tribal officials regarding air quality concerns. PLP at 5-782. The final PLP should indicate whether the UBWR made or attempted to make direct contacts with the Kaibab Tribe regarding tribal air quality concerns.*

**UDWRe Response:**

**There have been direct contacts with tribal officials regarding air quality concerns and this has been noted in text.**

**Kaibab Tribe Comment 67:**

*(Section 5.3.17.2.1)*

*The UBWR develops significance criteria for potential effects under the Clean Air Act's Primary Standards. PLP at 5-794. The Primary Standards are intended to protect public health, as opposed to the Secondary Standards that are intended to protect the public welfare. Id. Thus, the UBWR does not examine potential effects to TCPs due to the loss of visibility. The UBWR must look at potential effects to culturally significant visual landscapes from decreased air quality, especially since it did not do so in its analysis of potential effects to visual resources.*

**UDWRe Response:**

**The PLP has been revised to address impacts to visibility. This is also addressed in visual resources as well.**

**Kaibab Tribe Comment 68:**

*(Section 5.3.17.3.1)*

*The UBWR states that dust suppression activities would meet federal, state, and local requirements. PLP at 5-800. The UBWR will also need to comply with tribal requirements for construction activities occurring on tribal lands. The final PLP must state that the UBWR will comply with tribal requirements on tribal lands.*

**UDWRe Response:**

**These are design and construction issues. The comment has been noted.**

**Kaibab Tribe Comment 69:**

*(Section 5.3.18)*

*The UBRW took the information and conclusions in this section from the revised draft study report on noise, but as stated in the Kaibab Tribe's comments on the individual study reports, that study report is incomplete because it fails to address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBRW for revisions that adequately address tribal concerns.*

**UDWR Response:**

**Previous Kaibab Tribe comments were reviewed and incorporated as appropriate.**

**Kaibab Tribe Comment 70:**

*(Section 5.3.18.1.1)*

*The UBRW describes the area of potential effect in general terms, and notes the presence of "areas of possible cultural sensitivity." PLP at 5-806. The final PLP must include a detailed and precise description of the area of potential effect, and should account for the two-mile-wide area of potential effect for "historic properties or other culturally important sites, including any visual, audible, or air quality types of project-related effects." Letter from Timothy J. Welch, Chief, Hydro West Branch 2, Fed. Energy Regulatory Comm'n, to Eric Millis, Utah Div. of Water Res., Attachment A (May 7, 2009). In addition, areas of cultural sensitivity do, in fact, exist within the area of potential effect, so the UBRW must remove the term "possible" to describe such areas.*

**UDWR Response:**

**The cultural resources are addressed outside of the noise study but have been reviewed and noted**

**Kaibab Tribe Comment 71:**

*(Section 5.3.18.2.1.1)*

*The UBRW identifies persons who could potentially be affected by construction noise. PLP at 5-816 to -17 & tbl. 5-163. The UBRW does not mention tourists and other visitors to the Kaibab Indian Reservation, including visitors to the Kaibab Tribe Campground and RV Park.*

*The final PLP must address potential noise impacts on such visitors to the Kaibab Indian Reservation.*

**UDWR Response:**

**The text has been revised.**

**Kaibab Tribe Comment 72:**

*(Section 5.3.18.2.1.2)*

*The UBWR dismisses the potential effects of construction noise on visitors of the Kaibab Indian Reservation by stating persons who are outside are expected to be mobile and would simply move if construction noise became a nuisance. PLP at 5-818. The UBWR does not consider the potential effects to visitors staying at the Kaibab Tribe Campground and RV Park, however. Nor does the UBWR say whether it reached its conclusions after consulting with the Kaibab Tribe. The final PLP must state whether tribal consultations took place and must consider the potential effects to visitors staying at the Kaibab Tribe Campground and RV Park.*

**UDWRe Response:**

**Visitor receptors have been included in the text. Tribal officials were contacted to identify concerns with potential noise during construction. Mitigation is addressed in later sections.**

**Kaibab Tribe Comment 73:**  
(Section 5.3.18.2.1.3)

*The UBWR dismisses the potential effects of construction noise on wildlife without detailed analysis, simply assuming that wildlife would grow accustomed to the noise and eventually return to the area. PLP at 5-818 to -19. The final PLP must include a detailed analysis of the potential effects of construction noise on wildlife.*

**UDWRe Response:**

**It has been noted that there are some sensitive species that could potentially be affected however the nuisance levels at which they could be affected is not covered under this resource but it is not expected to be a significant impact.**

**Kaibab Tribe Comment 74:**  
(Section 5.3.18.2.3.2)

*The UBWR briefly examined the effects of construction noise on human and wildlife receptors within the Kaibab Indian Reservation. PLP at 5-819. The UBWR does not look at the potential effects on visitors staying at the Kaibab Tribe Campground and RV Park, however.*

*The final PLP must address such effects.*

**UDWRe Response:**

**The text has been revised to include visitors.**

**Kaibab Tribe Comment 75:**  
(Section 5.3.18.3.1)

*The UBWR states that the Kaibab Tribe did not request any "special mitigation measures" to lessen the effects of construction noise on the Kaibab Indian Reservation. PLP at 5-821. This is*

*insufficient, however. The final PLP must state whether the UBWR consulted with the Kaibab Tribe on this matter, and if so, describe the details of the consultations.*

**UDWRe Response:**

**Correspondence with Tribal Officials occurred and concerns regarding noise from the project were requested with no particular concerns expressed.**

**Kaibab Tribe Comment 76:**

*(Section 5.3.19)*

*The UBWR took the information and conclusions in this section from the 2015 Final Draft Class III Survey, but as stated in the Kaibab Tribe's comments on the individual study reports, the UBWR must still include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts. See PLP at P-1. Thus, the Kaibab Tribe asks the Commission to remand the PLP and revised draft study reports to the UBWR in order to fill in the substantial informational gaps.*

**UDWRe Response:**

**This report is an identification and evaluation of historic and cultural resources for Section 106 compliance. No sites have been evaluated for impacts or adverse effects at this stage of the project. Impacts and effects are generally discussed in the NEPA document during a later phase of project development. The HPMP is a draft document that will outline potential impacts at this point in the project. After the NEPA document has been completed the HPMP will be finalized.**

**Kaibab Tribe Comment 77:**

*(Section 5.3.20)*

*The Kaibab Tribe's comments regarding the Ethnographic Resources analysis in the PLP and the revised study reports are contained in the separately filed, non-public comments on Study Report 23.*

**UDWRe Response:**

**Your comment is noted.**

**Kaibab Tribe Comment 78:**

*(Section 5.3.21)*

*The UBWR took the information and conclusions in this section from the revised draft study report on paleontological resources, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include pending additional information and data regarding mitigation, unavoidable adverse impacts, and cumulative impacts, see PLP at P-1, and does not otherwise address the Kaibab Tribe's significant concerns regarding TCPs and other topics. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand*

*the PLP and revised draft study reports to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**Multiple attempts were made to obtain TCP data from the Kaibab Tribe but no TCP information was forthcoming.**

**Kaibab Tribe Comment 79:**  
(Section 5.3.22)

*The UBWR took the information and conclusions in this section from the revised draft study report on socioeconomics and water resource economics, but as stated in the Kaibab Tribe's comments on the individual study reports, that report is incomplete because it does not include important modeling results from Reclamation, see PLP at P-2, and does not address the Kaibab Tribe's significant concerns. Thus, the Kaibab Tribe incorporates its comments on the revised draft study report into these comments on the PLP, and asks the Commission to remand the PLP to the UBWR for revisions that adequately address tribal concerns and fill in the substantial informational gaps.*

**UDWRe Response:**

**In Final Study Report 10 - Socioeconomics and Water Resource Economics, it is noted that LPP Project impacts and economics opportunities for the Kaibab Tribe would likely be identified under an inter-governmental agreement between UDWRe and the Kaibab Tribe. UDWRe proposes to send a letter to the Kaibab Tribe explaining that Final Study Report 10 – Socioeconomics and Water Resource Economics is not the best instrument to adequately review, in full, the range of Kaibab Tribe socioeconomic impacts, including specific economic opportunities for the Kaibab Tribe. This effort requires a separate, more specific review, where direct discussions would occur at the technical level. The more-detailed review would serve as the basis for the inter-governmental agreement, also identifying realistic economic benefits for the Kaibab Tribe, relative to the LPP Project construction and future operation.**

**Kaibab Tribe Comment 80:**  
(Section 5.3.22.2.12)

*As the Kaibab Tribe stated in the comments below regarding the revised draft study report on socioeconomics and water resource economics, the UBWR is still expecting additional forthcoming analyses to determine the economic opportunities for the Kaibab Tribe and its members. Thus, this section of the PLP is incomplete and subject to change depending on the additional forthcoming analyses. The final PLP must include the results of the additional forthcoming analyses. Further, the final PLP must describe the UBWR's efforts to consult with the Kaibab Tribe on this matter.*

**UDWRe Response:**

**In Final Study Report 10 - Socioeconomics and Water Resource Economics, it is noted**

that LPP Project impacts and economics opportunities for the Kaibab Tribe would likely be identified under an inter-governmental agreement between UDWRe and the Kaibab Tribe. UDWRe proposes to send a letter to the Kaibab Tribe explaining that Final Study Report 10 – Socioeconomics and Water Resource Economics is not the best instrument to adequately review, in full, the range of Kaibab Tribe socioeconomic impacts, including specific economic opportunities for the Kaibab Tribe. This effort requires a separate, more specific review, where direct discussions would occur at the technical level. The more-detailed review would serve as the basis for the inter-governmental agreement, also identifying realistic economic benefits for the Kaibab Tribe, relative to the LPP Project construction and future operation.

**LPP Coalition Comment 1:**

*(Section 5.3.1.4.4, Page 5-81)*

*The PLP states:*

*“The No Lake Powell Water Alternative would have long-term unavoidable adverse effects on soil resources in the St. George metropolitan area. Soils would no longer be irrigated with potable water and would transition to either unvegetated conditions or support only desert vegetation, and the soil resources would be susceptible to erosion from wind and precipitation events.”<sup>7</sup>*

*The PLP does not provide a factual basis to support this claim and it should be deleted from the PLP. We describe the error above in Section 3.5.1.2.1 Re-Purposing Potable Water Use.*

<sup>7</sup> PLP, p. 5-81, *(emphasis added)*

**UDWRe Response:**

**Refer to the responses to BLM Comments 546 and 547.**

**LPP Coalition Comment 2:**

*(Section 5.3.2.5, Page 5-96)*

*The PLP states:*

*“The No Lake Powell Water Alternative would have unavoidable adverse effects and unavoidable adverse long-term cumulative effects on water supply in the St. George metropolitan area. The unavoidable adverse effects would result from hardening the water supply to the point there would be no water system supply buffer from drought conditions, low stream flows, low reservoir storage and other water supply limitations. All potable water would have to be used to meet indoor water demands, and no outdoor water use of potable water would be allowed.”<sup>8</sup>*

*The PLP does not provide sufficient information to support this conclusion. We describe the error above in Section 3.5.1.2.1 Re-Purposing Potable Water Use. These Unavoidable Adverse Effects should be deleted from the PLP.*

<sup>8</sup> PLP, p. 5-96, *(emphasis added)*

**UDWRe Response:**

**The text has been revised to address the comment.**

**American Rivers Comment 1:**

*(Section 5.2.1, Page 5-16)*

**The PLP Does Not Describe the Cumulative Effects of the Project on Regional Water Supplies Given Reasonably Foreseeable Climate Change Scenarios**

*The PLP does not describe the PLP's potential impacts on regional water supplies or surface waters in light of reasonably foreseeable climate change. Generally state and federal agencies use the Bureau of Reclamation's Colorado River Basin Study Report as evidence of diminishing water supplies. The report projects a 9% reduction in flows by 2050 due to climate change, compounding a projected 3.2 million acre/feet supply and demand imbalance. The full report is available at <http://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html>.*

*Additional studies predict 2.5 to 5.0 degree Fahrenheit increases in temperature throughout the Colorado River Basin by 2050. This warming trend is projected to be the largest in the continental interior (Dettinger et al, 2015) (Attachment 1). This increase in temperature will continue to change the timing and availability of flows, will significantly increase evapotranspiration, may reduce precipitation or change the type of precipitation (snow changes to rain) reducing snowpack. It is likely that a significantly hotter environment will demand more water and thus reduce water availability regardless of projected changes in precipitation.*

*We request that UBWR revise or supplement the PLP to state how the Project will affect regional water supplies given reasonably foreseeable Climate Change Scenarios. This information is necessary for OEP Staff's environmental analysis in the EIS.*

**UDWRe Response:**

**Refer to Final Study Report 19 – Climate Change.**

**American Rivers Comment 2**

*(Section 5.3.7, Page 5-293)*

**The PLP Does Not Provide Adequate Information to Evaluate the Project's Cumulative Effects on Listed Species Addressed by the Flaming Gorge Biological Opinion or Listed Species in the San Juan River**

*As stated above, it is our understanding that UBWR plans to release water for project operations from Flaming Gorge Reservoir and wheel it to Lake Powell using the Green and Colorado Rivers. This proposed operation would potentially change the volume, timing, and duration of flows in those rivers.*

*The PLP does not describe how this proposed operation would cumulatively affect species listed as endangered or threatened under the federal Endangered Species Act<sup>15</sup> that are present in the Green and Colorado Rivers, including the threatened Ute ladies' tresses, endangered Colorado pikeminnow, endangered humpback chub, endangered bonytail, endangered razorback sucker, and their designated critical habitat.*



<sup>15</sup> 16 U.S.C. § 1531 et seq.

*On September 6, 2005, the U.S. Fish and Wildlife Service issued a Final Biological Opinion to the U.S. Bureau of Reclamation (the Bureau) for its operation of Flaming Gorge Dam.<sup>16</sup> The Biological Opinion requires the Bureau to operate Flaming Gorge Dam to meet flow and temperature targets downstream in order to protect these listed species and their habitat. The PLP does not describe how UBRW's proposal to wheel water from Flaming Gorge Reservoir to Lake Powell would affect the Bureau's operations of Flaming Gorge Dam to comply with the Biological Opinion.*

*In addition, we are concerned that the Project diversions from Lake Powell to the Project's Water Intake System would affect these listed fish by increasing the likelihood of reduced water levels at Lake Powell. This, in turn, would potentially increase the frequency of occurrence of fish passage barriers, such as the waterfall at the confluence of the San Juan River and Lake Powell. Several listed species migrate up the San Juan River to spawn, but their passage is blocked at the confluence when the reservoir drops to certain levels.*

*We request that UBRW revise or supplement the PLP's description of impacts to "Special Status Species"<sup>17</sup> to include the cumulative effects of project operations on federally listed species on the San Juan, Colorado and Green Rivers in addition to the Colorado River below Glen Canyon Dam.*

<sup>16</sup> Available at:

<http://www.riversimulator.org/Resources/LawOfTheRiver/HooverDamDocs/Supplements/2005FinalBOFlamingGorgeDam.pdf>.

<sup>17</sup> See PLP, Section 5.3.7.

#### **UDWRe Response:**

**No change from baseline conditions. The flows being released from Flaming Gorge Dam under regular operations include the LPP Project water that would be diverted from Lake Powell. The LPP Project water is approximately 4 to 12 percent by volume of the annual operations volume released by Reclamation from Flaming Gorge Dam.**

## **General Comments on Studies:**

#### **FERC Comment 1:**

*As part of the PLP, you filed one complete study report and 22 draft study reports. As required by the Commission's regulations, your license application must include the results of all final studies, all proposed environmental measures, and an analysis of anticipated environmental benefits of proposed measures.*

#### **UDWRe Response:**

**Your comment has been noted.**

#### **FERC Comment 2:**

*We note that a number of your draft study reports are not consistent with the Commission-approved study plan and do not address, or fully address, the comments in our May 9, 2011, letter. For example, the revised Socioeconomic Study Report provided with the PLP appears to ignore several of the comments raised by our staff and fails to provide all of the information that Utah Board of Water Resources committed to include in the revised report (see Utah Department of Water Resources Responses to Participant Comments on Draft Study Reports filed July 28, 2011, and responses to FERC Comments 20, 22, 23, 24, 25, 26, 27, 28, 29, and 30). Also, Draft Study Report 8 – Paleontological Resources – does not address our May 9, 2011 initial study report comments. The final study reports filed with the license application should address all of our comments and meet all of the terms of your approved study plan.*

**UDWRe Response:**

**The final study reports have been updated to address all FERC comments and provide the data and analyses in the approved study plan.**

**FERC Comment 3:**

*Tables 6-1 through 6-4 of the revised Socioeconomic Study Report include economic analyses done with both nominal and real interest rates. Only a nominal interest rate should be used for the Commission economic results shown in this chapter. Therefore, Tables 6-2 through 6-4 should be removed from the Socioeconomic Study Report.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**FERC Comment 4:**

*On page 41 of the Revised Geology and Soils Study Plan, you propose to submit selected surface and coring samples for laboratory testing and analysis; include this information with the final study report.*

**UDWRe Response:**

**Samples were collected as part of the drilling and characterization studies performed at the Lake Powell Intake System by MWH and at the Hurricane Cliff Forebay and Afterbay reservoir sites by RB&G Engineers. The results of these sample analyses have been provided as appendices to the Geology and Soils Study Report. Authorization to drill and sample on lands administered by BLM, which is the majority of the alignment, was not granted except at the Hurricane Cliff sites. Given the high costs associated with drilling and the uncertainties of alignments, it did not make sense to drill except at the critical dam and tunnel/shaft sites. Therefore, no drilling was performed along alignment routes other than at these sites.**

**FERC Comment 5:**

*Section 2.1 of Draft Study Report 17, Surface Water Quality, filed with the PLP states: “[t]he aquatic resources analysis for the LPP Project was developed using existing information available from a variety of Federal and state resource agencies.” The final study reports filed*

*with your license application should list the relevant agencies and entities that have ongoing studies and monitoring programs for aquatic species, the objectives of the ongoing monitoring programs or studies, the periodicity of the monitoring programs or studies, and the general location or waterbody where the monitoring programs or studies occur.*

**UDWRe Response:**

**The Bureau of Reclamation, US Fish and Wildlife Service, US Geological Survey, Utah Division of Water Quality, and Arizona Department of Environmental Quality all perform ongoing water quality monitoring of Lake Powell and the Colorado River as part of commitments made under Records of Decision on EISs, biological opinions, and other studies and programs. Washington County Water Conservancy District owns, operates and monitors water quality in Sand Hollow Reservoir, where the Lake Powell water conveyed through the LPP Project would be delivered.**

**FERC Comment 6:**

*The Commission-approved study plan for terrestrial resources required the development of a conceptual mitigation and restoration plan that described mitigation for the effects on wetlands and riparian vegetation. Although the PLP describes your proposed best management practices (BMPs), it does not present sufficient detail to evaluate the efficacy of the BMPs and/or meet the standards for a conceptual mitigation and restoration plan. Therefore, file the wetlands and riparian resources mitigation plan with the license application and include documentation of any agency and tribal consultation that occurred during the preparation of the plan and any agency comments received on the draft plans.*

**UDWRe Response:**

**A Riparian Resources Mitigation Plan was added to the Wetlands and Riparian Resources Study Report**

**FERC Comment 7:**

*The Commission-approved study plan for terrestrial resources required the development of a mitigation plan to document mitigation measures to avoid, minimize, or reduce impacts on wildlife resources. Although the PLP describes BMPs, it does not present sufficient detail to evaluate the efficacy of the BMPs. Therefore, file the wildlife mitigation plan with the license application and include documentation of any agency and tribal consultation that occurred during your preparation of the plans and any agency comments received on the draft plans.*

**UDWRe Response:**

**A Draft Wildlife Resources Mitigation Plan has been prepared and is included as an appendix to Final Study Report 21 – Wildlife Resources. UDWRe's view is that a final Wildlife Resources Mitigation Plan is inappropriate at this stage of the project. No consultations have been undertaken and no comments have been received on the draft plan.**

**FERC Comment 8:**

*The study plan for Draft Study Report 9 – Recreation Resources – requires the recreation report to include details regarding the visitation and recreational use of the various recreation areas,*

*such as numeric visitor use estimates and seasonal use patterns. The final report filed with your license application should include this information along with the method used to estimate recreational use.*

**UDWRe Response:**

**The text has been revised to address the comment.**

## **Draft Study Report 1 – Air Quality:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 1: Air Quality (Nov. 30, 2015) (...Revised Draft Study Report I") fails to address most of the Kaibab Tribe's previous comments on earlier drafts of the air quality study report. See 2012 Comments at 2-4; 2011 Comments at 3-6. The UBWR states that Revised Draft Study Report 1 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 1 is noncompliant with Study Plan 1<sup>2</sup> and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

<sup>2</sup> *In the discussion of each revised draft study report, the Study Plan is cited with the number that corresponds to that revised draft study report. For example, "Study Plan 1" refers to the portion of the Study Plan that applies to air quality.*

**UDWRe Response:**

**The Kaibab Tribe comments have been reviewed, responded to as deemed appropriate, and noted. The comment has been noted.**

***Chapter 1 Comments:***

**Kaibab Tribe Comment 1:**

*(Section 1.2.5.2)*

*The Kaibab Tribe previously commented that, in addition to federal and state regulations, the natural gas pipeline must comply with any applicable tribal regulations. 2012 Comments at 2. The UBWR again did not address this concern in its latest draft study report. See Revised Draft Study Report 1 at 1-15. The final study report on air quality must state that the natural gas pipeline will also comply with any applicable tribal regulations.*

**UDWRe Response:**

**The natural gas pipeline alternative is no longer under consideration and is thus no longer applicable. The text has been revised to note that the projects will comply with tribal regulations.**

**Kaibab Tribe Comment 2:**

*(Section 1.5.2)*

*The Kaibab Tribe previously commented that the air quality study report must identify impacts to TCPs as an issue requiring detailed analysis. 2012 Comments at 2; 2011 Comments at 3. The UBWR failed to identify this issue in its latest draft study report. See Revised Draft Study Report 1 at 1-23. The final study report on air quality must identify impacts to TCPs as an issue for detailed analysis.*

**UDWRe Response:**

**Impacts to all areas were evaluated. The comment has been reviewed and noted.**

**Chapter 2 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 2.2.1.4)*

*The Kaibab Tribe previously commented that the UBWR must consider the Kaibab Tribe's resource management goals, 2011 Comments at 4, and that a cursory review by the UBWR of the Kaibab Tribe's Comprehensive Cultural Ecology Ordinance was inadequate. 2012 Comments at 3. The UBWR did not further address this issue in its latest draft report. See Revised Draft Study Report 1 at 2-3. The UBWR must consult with the Kaibab Tribe regarding tribal resource management goals and the final study report on air quality must adequately account for such goals.*

**UDWRe Response:**

**The tribal management goals and issues have been reviewed and addressed in the previous work.**

**Kaibab Tribe Comment 2:**

*(Section 2.3.1)*

*The Kaibab Tribe previously commented that the UBWR must clarify the distinction, if any, between the Impact Corridor described in section 2.3.1 and the Impact Area described in section 3.1. 2012 Comments at 3. The Kaibab Tribe also previously commented that the UBWR must account for and address the two-mile-wide area of potential effect established by the Commission for "historic properties or other culturally important sites, including any visual, audible, or air quality types of project-related effects." 2011 Comments at 5 (quoting Letter from Timothy J. Welch, Chief, Hydro West Branch 2, Fed. Energy Regulatory Comm'n, to Eric Millis, Utah Div. of Water Res., Attachment A (May 7, 2009)). The UBWR did not address these concerns in its latest draft report. See Revised Draft Study Report 1 at 2-5 and 3-1. The final study report on air quality must clarify any distinction between the Impact Corridor and Impact Area, and account for the area of potential effect established by the Commission relating to TCPs.*

**UDWRe Response:**

**The text has been revised to clarify the distinction.**

**Kaibab Tribe Comment 3:**

*(Section 2.4.2)*

*The Kaibab Tribe previously commented that the UBWR must acknowledge that certain cultural landscapes are "visually valuable" areas, and that the failure to do so contravenes Study Plan I. 2012 Comments at 3; 2011 Comments at 4. The UBWR continues to ignore such areas in its latest draft report. See Revised Draft Study Report 1 at 2-6. The final study report on air quality must account for potential effects to cultural landscapes and other TCPs of significance to the Kaibab Tribe.*

**UDWRe Response:**

**Visibility has been addressed in the text and in the Visual Resource Study Report.**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 3.3.1)*

*The Kaibab Tribe previously commented that the UBWR must indicate whether it contacted tribal agencies in addition to the named state agencies. 2012 Comments at 3-4; 2011 Comments at 5. The UBWR remains silent on this issue in its latest draft study report, however. See Revised Draft Study Report 1 at 3-4. The final study report on air quality must indicate whether the UBWR attempted to contact the Kaibab Tribe regarding any air pollutants of tribal concern.*

**UDWRe Response:**

**Tribal officials had been contacted regarding air quality concerns with information reviewed and incorporated.**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 4.1)*

*The UBWR describes the significance criteria for potential effects under the Clean Air Act's Primary Standards. Revised Draft Study Report 1 at 4-1. The Primary Standards are intended to protect public health, as opposed to the Secondary Standards that are intended to protect the public welfare. Id. Thus, the UBWR did not examine the potential effects to TCPs due to the loss of visibility. The UBWR must look at potential effects to culturally significant visual landscapes due to decreased air quality, especially since it did not do so in its analysis of potential effects to visual resources, discussed later in these comments.*

**UDWRe Response:**

**Potential visibility impacts caused by particulates generated from construction disturbance would be mitigated as practical and temporary in nature. Visibility impacts are addressed in the text and in the Visual Resource Study Report.**

**Kaibab Tribe Comment 2:**

*(Section 4.2)*



*The Kaibab Tribe previously commented that the UBWR must address and mitigate impacts to employees and visitors to the tribal headquarters and gas station and Pipe Spring National Monument. 2011 Comments at 5-6. Other than state that "[m]ost potential human receptors will be indoors and not potentially impacted," Revised Draft Study Report 1 at 4-3, the UBWR mostly ignores impacts to such persons in its latest draft report. See id. at 4-2 to -3. The final study report on air quality must address impacts to tribal employees and visitors to tribal facilities and Pipe Spring National Monument.*

*Section S.1.1LPP Alternative (Intake System, Water Conveyance System, Hydro System, Cedar Valley Pipeline System and Transmission Lines)*

*The Kaibab Tribe previously commented that, in addition to federal and state requirements, dust suppression activities must comply with tribal requirements when conducted on tribal lands. 2011 Comments at 6. The UBWR remains silent on compliance with tribal requirements in its latest draft report, however. See Revised Draft Study Report 1 at 5-1. The final study report on air quality must acknowledge tribal requirements for any dust suppression activities on Kaibab lands.*

**UDWRe Response:**

**Paragraph 1 – Additional text has been included to address mitigation for nearby human receptors.**

**Paragraph 3 – Tribal requirements will be followed during construction.**

**Chapter 6 Comments:**

**Kaibab Tribe Comment 1:**

*The UBWR mostly dismisses the potential for unavoidable adverse impacts for any of the pipeline alternatives. See Revised Draft Study Report 1 at 6-1. The UBWR did not consider the potential for unavoidable adverse impacts to TCPs, however. The final study report on air quality must analyze whether there will be any unavoidable adverse impacts to TCPs.*

**UDWRe Response:**

**The unavoidable adverse impacts include all areas including potential impacts to TCPs.**

**Chapter 7 Comments:**

**Kaibab Tribe Comment 1:**

*The UBWR lists five separate actions with the potential to have cumulative impacts when combined with the effects of the various pipeline alternatives, including: (1) Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead EIS and ROD; (2) Operation of Glen Canyon Dam EIS and ROD; (3) Interim Surplus Criteria EIS and ROD; (4) Development and Implementation of a Protocol for High-Flow Experimental Releases from Glen Canyon Dam, Arizona, 2011 through 2020 EA; and (5) Reclamation and National Park Service LTEMP EIS. Revised Draft Study Report 1 at 7-1. The UBWR does not explain how it determined that these actions were the only ones having the*



*potential for cumulative impacts. The final study report on air quality must explain how the UBRW determined that these were the only five actions with the potential to have cumulative impacts with the Lake Powell Pipeline Project.*

*In addition, in an early draft study report on visual resources, which is closely related to air quality, the UBRW identified six other actions with the potential to have cumulative impacts with the pipeline project: Southern Corridor Highway, Jackson Flat Reservoir, Anderson Junction Reservoir, Ash Creek Pipeline, Kern River-Hurricane Natural Gas Pipeline, and federal resource management plans for local National Conservation Areas. Modified Study Report 16 at 7-1. None of these six projects is identified in the latest draft study report on air quality as having the potential for cumulative impacts. The UBRW must explain how it determined that the five actions identified in Revised Draft Study Report 1 are the only actions having the potential for cumulative impacts.*

**UDWR Response:**

**These projects are either not part of the area of potential impact or will be constructed prior to LPP project and thus would not cause cumulative impacts with the LPP Project impacts.**

## **Draft Study Report 2 – Aquatic Resources:**

**General Comments:**

**USFWS Comment 1:**

*(Multiple Pages)*

***Aquatic Resources:** Several pages of the draft aquatic resources report refers to the Cedar Valley Water Treatment Facility. It is our understanding that the spur pipeline to Iron County is no longer part of the project. Please revise the report to reflect the accurate status of a pipeline to Iron County, Utah.*

**UDWR Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 2: Aquatic Resources (Nov. 30, 2015) ("Revised Draft Study Report 2") fails to address nearly all of the Kaibab Tribe's previous comments on an earlier draft of the aquatic resources study report. See 2011 Comments at 6-10. In addition, the UBRW states that Revised Draft Study Report 2 "will be updated with pending information and modeling results" from Reclamation, that "these modeling results will affect other resources included in the listed study reports," and it promises to file a final study report in April 2016 that addresses the comments received here as part of its license application. PLP at P-2. But this is insufficient. The Kaibab Tribe must have an opportunity to comment on the pending information and modeling results prior to their inclusion in a "final" report. As it stands, Revised Draft Study Report 2 is substantially incomplete and noncompliant with Study Plan 2, and the Commission should remand the*

*report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

***Executive Summary Comments:***

**Reclamation Comment 49:**

*(Section ES.3.1, Page ES-1)*

*The PLP states that: The implementation of mitigation measures at both sites during construction would result in minor impacts on aquatic resources that could not be measured and they would not be significant.*

*If you cannot measure, how can you say they would not be significant?*

**UDWRe Response:**

**The FERC-approved study plan included significance criteria developed with input and review by federal agency and tribal representatives. Where applicable, the significance criteria are based on quantified values. When an impact results in a quantified value that cannot be measured, then it cannot exceed the significance threshold and is therefore not a significant impact.**

**Reclamation Comment 50:**

*(Section ES.3.3, Page ES-2)*

*Operation of the No Lake Powell Water Alternative would cause indirect impacts resulting from restrictions on residential outdoor watering, which would reduce groundwater recharge that currently reports to the Virgin River and its tributary streams during the summer and fall months in the St. George metropolitan area.*

*How much?*

**UDWRe Response:**

***Chapter 1 Comments:***

**Reclamation Comment 52:**

*(Section 1.5, Page 1-23)*

*Pages 1-23 and 1-24 are duplicates.*

**UDWRe Response:**

**The duplicate page has been removed.**

**Kaibab Tribe Comment 1:**

(Section 1.2)

*The Kaibab Tribe previously commented that the UBWR must describe the location of all outlets along the pipeline route with the potential to introduce invasive species, including discharge and blowoff valves. 2011 Comments at 6. The UBWR did not describe such outlets in its latest draft study report. See Revised Draft Study Report 2 at 1-1 to -18. The final study report on aquatic resources must describe the location of all outlets and valves on the pipeline having the potential to introduce invasive species.*

**UDWRe Response:**

**The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.**

**Kaibab Tribe Comment 2:**

(Section 1.5)

*The Kaibab Tribe previously commented that inconsistencies exist between the issues and topics identified in Study Plan 2 and those identified in the draft aquatic resources report, 2011 Comments at 7, but the UBWR did not make any changes to the list of issues and topics identified in its latest draft report. See Revised Draft Study Report 2 at 1-24. The final study report on aquatic resources must clarify the inconsistencies that were pointed out by the Kaibab Tribe.*

**UDWRe Response:****Chapter 2 Comments:****Reclamation Comment 53:**

(Section 2.3, Page 2-1)

*The PLP states that: Aquatic species and their habitats occur only in and around perennial streams, rivers, reservoirs, springs and other water sources. Intermittent and ephemeral streams and washes do not contain suitable habitat for sustaining aquatic species, populations and their habitats.*

*What about seasonal use?*

**UDWRe Response:****Reclamation Comment 54:**

(Section 2.3, Page 2-1)

*The PLP states that: Existing access roads are available to provide construction access to the transmission line alignment alternatives and no new roads would have to be constructed near study area water bodies.*

*What about new poles?*

**UDWRe Response:**

**Reclamation Comment 55:**

*(Section 2.3, Page 2-2)*

*The PLP states that: Conveyance of water from Lake Powell to Sand Hollow Reservoir, the Kane County Water Treatment Facility and Cedar Valley Water Treatment Facility could potentially have an impact on aquatic resources in perennial streams and reservoirs where the water could flow.*

*Meaning is unclear.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 56:**

*(Section 2.4, Page 2-2)*

*The PLP states that: No field investigations specific to aquatic species were performed.*

*Was only habitat investigated? The statement is contradictory.*

**UDWRe Response:**

**Reclamation Comment 57:**

*(Section 2.5, Page 2-2)*

*The PLP states that: The majority of the geographically defined drainages the pipeline would cross or run parallel to are either dry (ephemeral) with limited flow during periods of rainfall and seasonal runoff and/or are documented as not being capable of supporting aquatic organisms and habitat on a sustained basis.*

*What about seasonal use by certain species?*

**UDWRe Response:**

**Kaibab Tribe Comment 1:**

(Section 2.2)

*The Kaibab Tribe previously commented that Study Plan 2 requires field reconnaissance and review, 2011 Comments at 7, but the UBWR has declined to conduct field investigations or explain why it opted not to do so in its latest draft report. See Revised Draft Study Report at 2-1. The final study report on aquatic resources must explain the UBWR's decision not to conduct field investigations.*

**UDWRe Response:**

**Chapter 3 Comments:**

**Reclamation Comment 58:**

(Section 3.1.2, Page 3-2)

*The PLP states that: Typically most healthy fish and actively motile aquatic species can avoid being entrained in an intake suction flow if the velocity is maintained below the escape velocity (swimming speed) of those organisms. For most fish, other aquatic vertebrates and many active motile larval stages and invertebrates, the escape velocity ranges from 0.5 to 0.6 feet per second.*

*Needs citation.*

**UDWRe Response:**

**Reclamation Comment 59:**

(Section 3.2, Page 3-5)

*The PLP states that: Intermittent Stream – A body of water flowing in a natural or man-made channel that contains water for brief periods of the year.*

*How long? How many months?*

**UDWRe Response:**

**The length of time an intermittent body of water flows and the periods of time when flow occurs varies.**

**Kaibab Tribe Comment 1:**

(Section 3.1)

*The Kaibab Tribe previously commented that the draft study report did not acknowledge that, in addition to federal, state, and privately managed lands, the pipeline may also cross tribal lands. 2011 Comments at 7. The UBWR did not correct this omission in its latest draft study report, however. See revised Draft Study Report 2 at 3-1. The final study report on aquatic resources must state that the pipeline may cross Kaibab lands.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 2:**

*(Section 3.2.2.2)*

*The Kaibab Tribe previously commented that the UBWR failed to account for or acknowledge the Paria River Management Plan, as required by Study Plan 2. 2011 Comments at 7-8. The UBWR continues to ignore the Paria River Management Plan in the latest draft study report. See Revised Draft Study Report 2 at 3-10 to -13. The UBWR must reference and consider the terms of the Paria River Management Plan in its final study report on aquatic resources.*

**UDWRe Response:**

**Kaibab Tribe Comment 3:**

*(Section 3.2.2.3)*

*The Kaibab Tribe previously commented that the UBWR failed to support its summary conclusion that the lower reach of Kanab Creek through the Kaibab Indian Reservation lacks recreational opportunities and does not support any aquatic resources. 2011 Comments at 8. The Kaibab Tribe also commented that the UBWR failed to identify any management plans for Kanab Creek and did not consider non-fish aquatic species. Id. The UBWR again makes the same unsupported conclusion regarding recreation and aquatic species, and fails to identify any management plan or consider non-fish species in its latest draft study report. See Revised Draft Study Report at 3-13 to -15. The UBWR must remove or support its conclusions that lower Kanab Creek lacks recreational opportunities and does not support aquatic resources, identify any available management plans for Kanab Creek, and consider non-fish aquatic species.*

**UDWRe Response:**

**Kaibab Tribe Comment 4:**

*(Section 3.2.2.5)*

*The Kaibab Tribe previously commented that the UBWR did not provide any specifics about the Virgin River Resource Management and Recovery Program or consider how the pipeline may affect that Program's objectives. 2011 Comments at 8. However, the latest draft study report does not provide any details regarding the Virgin River Resource Management and Recovery Program. See Revised Draft Study Report at 3-15. The final study report on aquatic resources must describe the Virgin River Resource Management and Recovery Program and consider how the pipeline may impact the Program's objectives.*

**UDWRe Response:**

**Chapter 4 Comments:**  
**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 2 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on aquatic resources must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**Kaibab Tribe Comment 2:**  
*(Section 4.3)*

*The Kaibab Tribe previously commented that the UBWR must describe the location of all outlets on the pipeline before it can determine that only minor or temporary impacts to aquatic resources are possible. 2011 comments at 9. The UBWR has still not described the location of such outlets, see Revised Draft Study Report at 4-2 to -7, so the latest draft report remains noncompliant with Study Plan 2. The final study report on aquatic resources must describe the location of all pipeline outlets and valves.*

**UDWRe Response:**

**The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.**

**Kaibab Tribe Comment 3:**  
*(Section 4.4)*

*The Kaibab Tribe previously commented that the UBWR must describe the location of all outlets on the pipeline before it can determine that only minor or temporary impacts to aquatic resources are possible. 2011 Comments at 9. The UBWR has still not described the location of such outlets, see Revised Draft Study Report at 4-8, so the latest draft report remains noncompliant with Study Plan 2. The UBWR also notes that aquatic organisms may be introduced to the Virgin River from Quail Creek Reservoir, but dismisses this as unlikely and fails to conduct any analysis or describe any mitigation measures related to this possibility. Id. The final study report on aquatic resources must describe the locations of all pipeline outlets and valves, include an analysis of potential effects to the Virgin River, and describe any mitigation measures to be implemented.*

**UDWRe Response:**

**The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.**



**Chapter 5 Comments:**  
**Kaibab Tribe Comment 1:**

*The UBWR states that the pipeline and associated features will be constructed in accordance with best management practices, and it lists eight mitigation measures that would be implemented to avoid and mitigate effects on aquatic resources and habitats. Revised Draft Study Report 2 at 5-1 to -2. The UBWR must consult with the Kaibab Tribe regarding tribal requirements and mitigation measures to be implemented for any part of the pipeline that crosses the Kaibab Indian Reservation and the UBWR must acknowledge these requirements in its final study report on aquatic resources.*

**UDWRe Response:**

**Chapter 6 Comments:**  
**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 2 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on aquatic resources must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the UBWR concludes that none of the construction and operation activities for any of the pipeline alternatives would have any measurable long-term unavoidable adverse impacts on aquatic resources. Revised Draft Study Report 2 at 6-1 to -2. The UBWR has not described the locations of all outlets and valves along the pipeline route, however, and it cannot make an accurate determination regarding unavoidable adverse impacts until it does so. The final study report on aquatic resources must consider the locations of pipeline outlets and valves before making a determination regarding unavoidable adverse impacts.*

*Moreover, as described later in the comments on the revised draft study report on special status aquatic species and habitats, the UBWR makes a different conclusion regarding the potential for biota transfer and the introduction of invasive species from Lake Powell during the operation of the project, saying this issue is "of concern" and that eliminating this potential "is not a reasonable assumption and some risk will always remain as an unavoidable adverse effect or impact of the project." Draft Study Report 11: Special Status Aquatic Species and Habitats at 6-1 (Nov. 30, 2015) ("Revised Draft Study Report 11"). The UBWR must reconcile the conflicting conclusions it reached in Revised Draft Study Report 2 and Revised Draft Study Report 11 regarding unavoidable adverse impacts and the potential for transferring invasive species from Lake Powell.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.**

### ***Chapter 7 Comments:***

#### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 2 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on aquatic resources must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, since the UBWR concludes that the Lake Powell Pipeline Project would have no measurable long-term unavoidable adverse impacts on aquatic resources, it also concludes that there will be no cumulative impacts from construction and operation of the pipeline. Revised Draft Study Report 2 at 7-1. As stated above, however, the UBWR has not described the locations of all outlets and valves along the pipeline route, so it cannot make an accurate determination regarding either unavoidable adverse impacts or cumulative impacts. The final study report on aquatic resources must consider the locations of pipeline outlets and valves before making a determination regarding cumulative impacts.*

#### **UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**The locations of the drain valves – and hence the local natural drainages into which they would drain – are unknown at this time and would be determined during the detailed design phase of the project.**

## **Draft Study Report 3 – Archaeological and Historic-Era Resources:**

#### **FERC Comment 1:**

*Tables 1-2 and 1-3 of your Class III Report identify the total miles and acreage within the proposed project area of potential effect (APE) by proposed project feature and jurisdiction; however, the total number of miles within the APE on BLM land and the total miles and acreage within the APE on Tribal land in Arizona shown in table 1-3 of the Class III Report are incorrect. When we sum the total miles within the APE on BLM lands in Arizona in table 1-3 we get 46.87 miles (not 6.87 miles). Likewise, our total miles on Tribal lands in Arizona is 24.25 miles (not 631.35), and our total acreage on Tribal lands is 660.35 acres (not 53.24 acres). Ensure that all tables and sums in the license application and supporting materials and studies are accurate.*

**UDWRe Response:**

**Your comment has been noted.**

**FERC Comment 2:**

*In the license application, briefly describe the methodology used to identify cultural resources within the APE and evaluate cultural resources for listing in the National Register of Historic Places (National Register). Include the total miles and acreage that were and were not surveyed within the APE, including the total number of miles on private, state, and federal lands. If specific lands were not surveyed, explain why they were excluded.*

**UDWRe Response:**

**The final study report describes the methodology used to identify cultural resources within the APE and to evaluate cultural resources for listing as eligible for inclusion in the National Register of Historic Places. The total miles and acreage of survey is summarized in the final study report. A total of 15.4 miles of private land were not surveyed because landowners did not grant permission or did not respond to repeated attempts to requests for permission to perform non-ground disturbing, pedestrian surveys for cultural resources. All remaining private, state and Federal lands associated with the Proposed Action and alternatives were surveyed and the data collected are included in the final study report.**

**FERC Comment 3:**

*Your license application and revised Class II Report should ensure that all terms are clear and well defined. For example, in table-5-2 and table 5-7 of the Class III Report, one column discusses “Geoarch Evaluation” and some sites are indicated as “Moderate,” “Low,” “Low (tested),” and “High.” We understand that the Geoarchaeology Report (appendix I) discusses these terms, but if they are used in the Class III Report or in the license application, you must briefly explain these terms and what criteria were used to assign them. Additionally, both of these tables in the Class III Report would benefit from an additional column that provides approximate date ranges and the cultural period or stage associated with each resource (e.g., Archaic and Basketmaker).*

**UDWRe Response:**

**All terms used in the Class III report have been defined and consistently applied and used throughout the documents comprising the Class III report.**

**FERC Comment 4:**

*Section 6.4.1 of the Class III Report states that sites and isolated finds that are not eligible for listing in the National Register will not be affected by the proposed project. Clarify in the final report that these sites may be affected, but because they may not be eligible for listing in the National Register, the effects would not be considered under section 106 of the National Historic Preservation Act.*

**UDWRe Response:**

**The Class III report clarifies that cultural resource sites and isolated finds not eligible for listing in the National Register may be affected by the LPP Project, but because they may not be eligible for listing in the National Register, the effects would not be considered under Section 106 of the National Historic Preservation Act.**

## **Draft Study Report 4 – Geology and Soil Resources:**

### ***General Comments:***

#### **Reclamation Comment 60:**

*(General Comments)*

*The report exhibits the recent preliminary studies performed along the potential alignments of the proposed pipeline and related structures, from the intake at Lake Powell to the outflow at Sand Hollow Reservoir. The report addresses anticipated and potential geologic hazards and impacts of the proposed pipeline and structures along the pipeline alignments being considered. The report is comprehensive and a useful tool to guide further studies for design of the proposed pipeline and associated structures.*

*The report outlines impacts to the proposed pipeline alternatives during construction and operation of the system for its design life. The impacts consist of faulting and seismic activity and expected rates of occurrence for these events; unstable slope potential; observed and potential expandable, collapsible, and or subsiding soils and rock; geologic hazards to human health and safety including dewatering activities for trenches, shafts, and tunnels, and trench stability; impacts to existing structures and mineral resources; and potential borrow sources and spoil locations.*

*Additional site specific work will need to be completed for design of the proposed pipeline and associated structures. Both surface and subsurface geologic survey and explorations should be performed to quantify geologic hazards for mitigation during design and construction. The potential for the identified geologic hazards to impact the proposed pipeline and associated structures are significant.*

### **UDWRe Response:**

**UDWRe acknowledges that additional and site-specific geologic and geotechnical investigations, both surface and subsurface, will be required for detailed design and construction. Such investigations were beyond the scope of this study.**

### **Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 4: Geology and Soil Resources (Nov. 30, 2015) ("Revised Draft Study Report 4") fails to address nearly all of the Kaibab Tribe's previous comments on an earlier draft of the geology and soil resources study report. See 2011 Comments at 10-13. The UBWR states that Revised Draft Study Report 4 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 4 is noncompliant with Study Plan 4 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

The Kaibab Band of the Paiute Tribe environmental coordinator, LeAnn (Bambi) Skrzynski, met with the MWH field team leader on August 5, 2009. The purposes of the field studies pertaining to geology and soils and groundwater resources were briefly discussed, and Ms. Skrzynski was asked if the Tribe had any pertinent information for the study. Ms. Skrzynski said the tribe did not have its own geologist on staff but did refer to a small collection of documents that could be reviewed. The documents were reviewed but no information was found that was not already available from other sources. Authorization to drive on public roads for general area inspection was granted. Because it did not appear that the Tribe could provide additional relevant information pertaining to geology and soils or groundwater resources, no further consultation was sought for these resource studies.

***Executive Summary Comments:***

**Lisa Rutherford and Paul Van Dam Comment 72:**

*Revised Draft Study Report 4 – Geology and Soils Resource Study Report*

***Executive Summary***

***ES.3.1 South Alternative (Page ES-1)***

*No significant impacts associated with the impact topics are expected to occur during construction and operation of the South Alternative. Fault movement along the alignment is expected to be below 75 mm during the LPP Project design life. The alignment is not within a zone of high projected Peak Ground Acceleration (PGA).*

***COMMENT***

*Apparently the same potential impacts apply to all LPP alignments. “Fault movement” along all alignments may be below 75mm “during the LPP Project design life” but what happens after that? Why is Applicant only responsible for the project design life? Given that we have experienced two major floods in Washington County in 2005 and again in 2010 that were supposed to be 500 to 1,000 year events, how can Applicant assure the public that these fault characteristics, described further below, won’t be problematic?*

**UDWRe Response:**

The study necessarily is limited to the design life of the project, it cannot look indefinitely into the future. Evaluation of risks associated with future fault movement is inherently associated with observing past fault movement. One cannot simply speculate that a greater rate of movement may or may not occur without evidence to support that assertion.

**Lisa Rutherford and Paul Van Dam Comment 73:**

***ES.3.5 No Lake Powell Water Alternative (Page ES-2)***

*The No Lake Powell Water Alternative would have long-term impacts on soil resources in the St. George metropolitan area because use of potable water for outdoor landscape watering would be eliminated. Unvegetated or desert soil resources resulting from eliminating outdoor watering with*

*potable water would become susceptible to erosion from wind and precipitation events. These soil resource impacts would be significant.*

**COMMENT**

*This assertion by Applicant is humorous. This area that was populated in the 1800s was a desert – susceptible to erosion from wind and precipitation events. Is the Applicant asserting that by less use of valuable potable water on outdoor landscaping we are creating a bigger problem than the original pioneers faced? Applicant seems to be without any useful rationale to explain why the “No Lake Powell Water Alternative” would be worse than building the LPP. Given the “over watering” of landscape identified in the state’s December 2014 audit of the Division of Drinking Water, much water conservation can be achieved, along with much growth, without returning our county to the landscape of pre-pioneer days.*

**UDWRe Response:**

**The evaluation of impacts is not based on original, pristine natural conditions, but on existing conditions that serve as a baseline for impacts. Removal of irrigation would change those conditions and the impact would be significant. The existing vegetation would change and diminish without being replaced by comparable ground cover, and the potential for erosion by wind and rain would increase until natural conditions could be re-established. The development of cryptobiotic soils is a process that, in southern Utah, can be expected to take decades or even centuries, and erosion can remove soils prior to establishment of soil crusts (Belnap, J. 2013. Cryptobiotic Soils: Holding the Place in Place. <http://geochange.er.usgs.gov/sw/impacts/biology/crypto/>). The reviewer may feel that a return to pre-settlement conditions would be beneficial, but this study by definition is restricted to evaluating impacts relative to baseline (existing) conditions. UDWRe’s view is that no revision to the statement is needed.**

**Chapter 1 Comments:**

**Kaibab Tribe Comment 1:**  
(Section 1.5.2)

*The Kaibab Tribe previously commented that impacts to TCPs from blasting activities should be identified as an issue, 2011 Comments at 10, but the UBWR did not identify this issue in the latest draft study report. See Revised Draft Study report 4 at 1-23 to -24. The final study report on geology and soil resources must identify impacts to TCPs as an issue for detailed analysis.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Kaibab Tribe Comment 2:**  
(Section 1.5.3)

*The Kaibab Tribe previously commented that the study report on geology and soil resources must identify potential impacts to TCPs as an impact topic. 2011 Comments at 10 (referring*



to former section 1.6). The UBWR has not identified such impacts in its latest draft report, however. See Revised Draft Study Report 4 at 1-24 to -25. The final study report on geology and soil resources must include potential impacts to TCPs in the list of impact topics to be considered.

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Chapter 2 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 2.3)*

*The Kaibab Tribe previously commented that the UBWR should make and identify efforts to obtain tribal data in order to address tribal concerns and resource management goals. 2011 Comments at 10-11. The UBWR has still not done so in its latest draft study report, however. See Revised Draft Study Report at 2-1 to -3. The final study report on geology and soil resources must include this information.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Kaibab Tribe Comment 2:**

*(Section 2.4.6)*

*The Kaibab Tribe previously commented that the UBWR must identify and consider potential impacts to TCPs. 2011 Comments at 11. The latest draft study report continues to ignore such impacts, however. See Revised Draft Study Report 4 at 2-5. The final study report on geology and soil resources must identify and consider potential impacts to TCPs.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Lisa Rutherford and Paul Van Dam Comment 74:**

**Chapter 2 - Methodology**

**2.3 Data Used (Page 2-1)**

*The information that was reviewed for this study included the following maps and documents. The complete references are found in in (sic) the reference section at the end of this study report: Fugro William Lettis and Associates (FWLA). 2009. Geologic Characterization of Multiple Fault Crossings along the Proposed Lake Powell and Cedar Valley Pipelines, Hurricane Cliffs Hydropower Facility, Iron, Washington and Kane Counties, Utah and Mohave and Coconino Counties, Arizona*

**COMMENT**



*Applicant states that the 2009 FWLA report shown above was reviewed for Study Report 4, but the 2009 FWLA report apparently does not include information specific to the major Hurricane fault. The FWLA report reviewed states on page 5:*

*“The Hurricane fault crossing associated with the Hurricane Cliffs Hydropower facility is discussed separately in other reports submitted by FWLA.”*

*FERC should expect Applicant to explain why the separate FWLA Hurricane fault report was not reviewed and used in the Study Report 4 analyses.*

**UDWRe Response:**

**Fugro William Lettis and Associates prepared a separate report documenting characterization of the Hurricane fault system in the vicinity of the proposed Hurricane Cliffs Hydropower facility. This report, which was reviewed and used for analysis but erroneously not identified in the Revised Draft Geology and Soils Study Report, is as follows:**

**Fugro William Lettis and Associates (FWLA). 2009. Phase 1 Geologic Characterization and Hazard Investigation, Hurricane Cliffs Hydropower Facility, Washington County, Utah. Prepared for MWH Americas, Inc., December 2009.**

**This reference has been added to the Geology and Soils Study Report.**

**Lisa Rutherford and Paul Van Dam Comment 75:**

**2.4 Impact Analysis Methodology (Page 2-3)**

**2.4.1 Fault Movement Impacts**

*Faults were identified as part of the field survey. Major faults were evaluated for hazard potential by Fugro William Lettis and Associates (FWLA). Their findings are incorporated into this report. A report of FWLA’s findings is included as Attachment A.*

**COMMENT**

*FERC should expect Applicant to explain why the separate FWLA Hurricane fault report was not reviewed and used in the Study Report 4 analyses.*

**UDWRe Response:**

**Refer to the response to Lisa Rutherford and Paul Van Dam Comment 74.**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 3.12)*

*The Kaibab Tribe previously commented that the UBWR must acknowledge and consider the potential impacts to TCPs within the area of potential effect, 2011 Comments at 11, but the UBWR continues to ignore such impacts in its latest draft report. See Revised Draft Study Report 4 at 3-1. Again, the final study report on geology and soil resources must consider potential impacts to TCPs within a properly defined and sufficiently broad area of potential*

effect.

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Lisa Rutherford and Paul Van Dam Comment 77:**

***Chapter 3 Affected Environment (Baseline Conditions)***

***3.2.7 Borrow and Spoil (Page 3-38)***

*Table 3-14 lists the length of each trench category for each of the three alignment alternatives and provides an estimate of the volume of material to be excavated. The volumes listed in Table 3-14 do not factor in any expansion of the material from the in-situ condition.*

**COMMENT**

*Although this section of Draft Study Report 4 actually precedes the information referenced earlier due to its number, it's been saved for last since it serves to point to the magnitude of this project that many in our county and state view as unnecessary, unaffordable and extravagant. Here is Table 3-14 (page 3-44):*

Table 3-14						
Lake Powell Pipeline Summary of Excavated Volumes from Trenches and Tunnels						
	South Alignment		Highway Alignment		Southeast Corner	
Trench Description	Length (ft)	Excavated Volume* (cy)	Length (ft)	Excavated Volume* (cy)	Length (ft)	Excavated Volume* (cy)
Excavatable >15ft	219,650	2,107,310	292,650	2,807,667	169,500	1,626,173
Rippable	117,000	1,122,491	178,500	1,712,519	117,000	1,122,491
Blasted	244,500	1,666,269	107,500	732,613	235,500	1,178,996
Mixed: soil over rippable	39,850	382,319	45,850	439,882	90,000	863,455
Mixed: soil over blasted	107,000	806,607	60,000	452,303	107,000	783,992
Total	728,000	6,084,996	684,500	6,144,985	719,000	5,575,108
Tunnel Description		Length (ft)		Excavated Volume** (cy)		
Tunneled - Intake System		Various		10,819		
Tunneled - Hurricane Cliffs		3,895		36,710		
Tunneled - Sand Hollow		4,275		40,291		
Total		8,170		87,819		
Notes:						
*Does not include any reuse of material for pipe bedding						
**Assume 18 foot diameter tunnel and shafts						

*As shown in Table 3-14, excavated volumes from the three alignments are 6,084,996 cy, 6,144,985 cy and 5,575,108 cy depending of the alignment. To give some comparison to these volumes, the following is provided from the U.S. Bureau of Reclamation's website "Hoover Dam Factoids for Kids":*

*4. There is enough concrete in Hoover Dam (4 1/2 million cubic yards) to build a 2 lane road from Seattle, Washington to Miami, Florida or a 4 ft. wide sidewalk around the Earth at the Equator.*

*The LPP will require excavated volumes from trenches and tunnels – depending on which alignment is used – that will be more (at least one million cy more!) than the total volume of concrete used to build Hoover Dam. Soil excavated from some of the most scenic landscapes on this planet!*

**UDWRe Response:**

**Table 3-14 has been revised to account for estimated expansion and recompaction of excavated, blasted, and ripped materials.**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 4.1)*

*The Kaibab Tribe previously commented that the UBWR failed to identify impacts to TCPs as "significant." 2011 Comments at 11. The UBWR continues to ignore such significant impacts in its latest draft report. See Revised Draft Study Report 4 at 4-1. The final study report on geology and soil resources must identify impacts to TCPs as significant under the significance criteria.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Kaibab Tribe Comment 2:**

*(Section 4.3)*

*The Kaibab Tribe previously commented that the UBWR must account for impacts to TCPs when applying the significance criteria to the South Alternative. 2011 Comments at 12. The UBWR again ignores such impacts in its latest draft study report. See Revised Draft Study Report 4 at 4-2 to -5. The UBWR must address impacts to TCPs when applying the significance criteria in its final study report on geology and soil resources.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Kaibab Tribe Comment 3:**

*(Section 4.4)*

*The Kaibab Tribe previously commented that the UBWR must account for impacts to TCPs when applying the significance criteria to the Existing Highway Alternative, 2011 Comments at 12, but the UBWR ignores such impacts in its latest draft study report. See Revised Draft Study Report 4 at 4-5 to -8. The UBWR must address impacts to TCPs when applying the significance criteria to the existing highway alternative in its final study report on geology and soil resources.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Kaibab Tribe Comment 4:**

*(Section 4.5)*

*The UBWR states that the impacts for the Southeast Corner Alternative are the same as for the South Alternative. Revised Draft Study Report 4 at 4-8. As noted above, the UBWR did not consider impacts to TCPs in applying the significance criteria to the South Alternative, so the Kaibab Tribe's concerns about impacts to TCPs also apply to the Southeast Comer Alternative.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

**Lisa Rutherford and Paul Van Dam Comment 76:**

***Chapter 4 Environmental Consequences (Impacts)***

***4.1.1 Fault Movement (Page 4-1)***

*Fault movement impacts would be considered significant if the rate of displacement would result in pipeline rupture. The minimum total allowable displacement that would result in pipeline rupture has not been determined, but for large diameter steel pipe the displacement tolerance is likely to be at least 75 mm (about three inches). Thus, an average displacement rate of 1 mm/year or more would be more likely to result in pipeline rupture during the design life of the Project and therefore could cause a significant impact.*

***4.1.2 Seismic Activity (Page 4-1)***

*Seismic activity would have a significant impact if an earthquake would create unstable foundation conditions for the pipeline or associated features, resulting in pipeline deformation or rupture, or pipeline feature failure. This instability could include liquefaction of underlying soils or slope failure above or below the pipeline or associated features. Proper seismic design would prevent substantial damage to the pipeline or associated features in the event of an earthquake under most circumstances. A risk of a significant impact would be high if all or part of an alignment alternative is located in a zone with high (greater than about 0.4 gravity) Peak Ground Acceleration (PGA) with a two percent or greater probability of exceedance within 50 years, and this would occur in a location with a high probability of liquefaction (saturated, sandy soil within the pipeline trench depth or excavated depth of pipeline facilities; for practical purposes a depth of 15 feet was assumed for the LPP Project).*

***4.1.4 Expandable, Collapsible, or Subsiding Soils or Rocks (Page 4-1)***

*Geologic hazards from soil or rock conditions would have a significant impact if such conditions would occur and would cause deformation or failure of foundation conditions underlying the pipeline or associated features sufficient to cause pipeline rupture or failure of associated pipeline features*

**COMMENT**

*Comment references items 4.1.1, 4.1.2 and 4.1.4. Having lived and worked in Alaska for 30*

years, twenty of those years for an oil company, I realize that engineering can accomplish amazing feats, as evidenced by the Trans-Alaska Pipeline (TAPS). That said, our concerns regarding the LPP and the geology of earthquake faults in Utah that the LPP would cross seem valid. If the LPP were really needed – authors believe the comments presented in this document to FERC show the LPP is not needed – accepting these risks might be more reasonable. The TAPS was also built in an area that is subject to earthquakes, but the TAPS was funded by well-healed oil companies that were willing to put a great amount of money into the project to ensure those challenges would be mitigated effectively. Our state, one that's recognized as being tight with money, may not be so willing to put in the necessary money and cutting corners may result.

The William Lettis & Associates pipeline assessment that accompanies Study Report 4, does not seem to draw any conclusions based on their study as to whether the LPP should or should not be built in the fault areas under review, but does provide the following information from their Table 4 which “summarizes potential seismic source characterization data for faults within about 20 miles of the alignments which may be potentially significant as sources for ground motions at specific facilities along the alignments.” Table 4 includes a “Rupture Assessment” category which designates the Sevier fault (N. Toroweap) as having “High significance” for rupture. It also designates the Sand Mountain-West Grass Valley fault to have “High significance” for rupture. “Surface rupture or deformation hazards include an assessment of the likelihood that deformation might be expected at each crossing, as well as the relative amount or magnitude of that deformation” (page 7 – William Lettis & Assoc. analysis).

Information in this table is from Table 4 referenced above:

Fault Name	Alignment	Rupture	Slip Rate
Sevier fault (N. Toroweap)	Highway	High significance	0.04-0.18 mm/yr
Sevier fault (N. Toroweap)	South	High significance	0.04-0.18 mm/yr
Sand Mountain -West Grass Valley fault	Western LPP	High significance	0.1-0.2(?) mm/yr

[(?) shown in above Table 4 information is as it appears in Draft Study Report 4]

Also from the William Lettis & Assoc. analysis:

“No earthquakes with surface rupture have occurred in southwest Utah in historic time. However, at least 20 earthquakes with a magnitude greater than a 4.0 have occurred in historic time, including the M5.8 St. George event in 1992 (Christenson, 1995) and the M6.0 Pine Valley EQ in 1902.”

“Considering most of the seismogenic faults within this region probably have moderate dips within the upper crust (50 – 70°), the total cumulative fault slip rate across the transition may be somewhat greater.”

“Total displacement on the Hurricane has been estimated to be greater than 2,000 meters (ESA, 1982).” Study Report 4’s 3.2.1 Fault Movement section acknowledges these faults but adds the caveat:

“These fault crossings are not located near populated areas, decreasing the potential risk of impacts associated with a pipeline rupture.”

*As tax payers faced with paying for this expensive project, this is perhaps cold comfort to assert that just because these areas are not near populated areas “all is well.”*

*FERC would do the tax payers of Utah a great service by reviewing this situation carefully.*

**UDWRe Response:**

**The FWLA studies do not identify any faults crossed by the pipeline which would exceed the significance criteria identified.**

***Chapter 5 Comments:***

**Kaibab Tribe Comment 1:**

*The UBWR states that the pipeline and associated features will be constructed in accordance with Best Management Practices and Special Use Permits issued by the National Park Service and Bureau of Land Management. Revised Draft Study Report 4 at 5-1. The UBWR must consult with the Kaibab Tribe regarding mitigation measures, including measures to avoid and minimize impacts to TCPs, and comply with tribal requirements for any part of the pipeline that crosses the Kaibab Indian Reservation, and the UBWR must acknowledge these requirements in its final study report on geology and soil resources.*

**UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 4 – Geology and Soil Resources.**

## **Draft Study Report 5 – Groundwater Resources:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 5: Groundwater Resources (Nov. 30, 2015) ("Revised Draft Study Report 5") fails to address many of the Kaibab Tribe's previous comments on an earlier draft of the groundwater resources study report. See 2011 Comments at 13-14. The UBWR states that Revised Draft Study Report 5 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 5 is noncompliant with Study Plan 5 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**The Kaibab Band of the Paiute Tribe environmental coordinator, LeAnn (Bambi) Skrzynski, met with the MWH field team leader on August 5, 2009. The purposes of the field studies pertaining to geology and soils and groundwater resources were briefly discussed, and Ms. Skrzynski was asked if the Tribe had any pertinent information for the study. Ms. Skrzynski said the tribe did not have its own geologist on staff but did refer to a**

small collection of documents that could be reviewed. The documents were reviewed but no information was found that was not already available from other sources. Authorization to drive on public roads for general area inspection was granted. Because it did not appear that the Tribe could provide additional relevant information pertaining to geology and soils or groundwater resources, no further consultation was sought for these resource studies.

### ***Chapter 3 Comments:***

#### **Kaibab Tribe Comment 1:**

*(Section 3.2.1.4)*

*The Kaibab Tribe previously commented that the UBWR must determine the quantitative and qualitative impacts to groundwater quality at the location of the Hurricane Cliffs Hydropower afterbay reservoir. 2011 Comments at 13-14. The UBWR has still not done so in its latest draft study report, however. See Revised Draft Study Report at 3-7. The final draft study report on groundwater resources must determine the quantitative and qualitative impacts to groundwater quality at this location.*

#### **UDWRe Response:**

**Section 4.3.2.4 of the Revised Draft Groundwater Resources Study Report states the following:**

**“Recharge at the afterbay reservoir is of unknown quantity into an aquifer of unknown quality; however, recharge would be into a deep aquifer with few or no groundwater users. Therefore, no measurable impacts and no significant impacts are expected to occur.”**

**This applies to all of the action alternatives. UDWRe’s view is that no revision to the text is required.**

### ***Chapter 4 Comments:***

#### **Kaibab Tribe Comment 1:**

*(Section 4.4)*

*The Kaibab Tribe previously commented that the UBWR must describe its efforts to consult with the Tribe regarding potential impacts to groundwater during the construction of the Existing Highway Alternative. 2011 Comments at 14. The latest draft study report does not include such a description. See Revised Draft Study Report 5 at 4-3 to -4. The final study report on groundwater resources must include information regarding the UBWR's efforts to consult with the Kaibab Tribe on groundwater issues.*

#### **UDWRe Response:**

**Refer to the response to Kaibab Tribe Comment 1 in the General Comments section of Study Report 5 – Groundwater Resources.**

### ***Chapter 5 Comments:***

#### **Kaibab Tribe Comment 1:**

*The UBWR states that Best Management Practices would be utilized to protect and mitigate*



*impacts to groundwater resources. Revised Draft Study Report at 5-1 to -2. In addition to best management practices, the UBWR must consult with the Kaibab Tribe regarding mitigation measures and comply with tribal requirements for any part of the pipeline that crosses the Kaibab Indian Reservation, and the UBWR must acknowledge this in its final study report on groundwater resources.*

**UDWRe Response:**

**The Final Study Report Appendix C provides a list of anticipated BMPs. The Tribe may review those BMPs and can identify any deficiencies it identifies for parts of the pipeline that cross reservation land. UDWRe's view is that no change is needed.**

## **Draft Study Report 6 – Land Use Plans and Conflicts:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 6: Land Use Plans and Conflicts (Nov. 30, 2015) ("Revised Draft Study Report 6") fails to address many of the Kaibab Tribe's previous comments on an earlier draft of the land use plans and conflicts study report. See 2011 Comments at 15-20. The UBWR states that Revised Draft Study Report 6 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 6 is noncompliant with Study Plan 6 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**The previous comments were responded to in the previous round of responses. Most of the comments were in regard to tribal land management and culturally sensitive areas and the impacts to them. Multiple efforts were made to obtain both sets of data from the tribe to perform the analysis but a response was never received. Analysis could not be conducted on data that was not in our possession.**

***Chapter 1 Comments:***

**Kaibab Tribe Comment 1:**

*(Section 1.5.2)*

*The Kaibab Tribe previously commented that the UBWR must identify the issue of potential impacts to TCPs, 2011 Comments at 15, but the UBWR continues to ignore this issue in its latest draft study report. See Revised Draft Study Report 6 at 1-23 to -24. The final study report on land use plans and conflicts must identify impacts to TCPs as an issue of concern for detailed analysis.*

**UDWRe Response:**

**TCP data was never received from the tribe so impacts could not be analyzed.**

**Kaibab Tribe Comment 2:**

(Section 1.6)

*The Kaibab Tribe previously commented that the UBWR must list impacts to TCPs as an impact topic. 2011 Comments at 15. Although the UBWR lists National Historic Trails and many other land use topics, it continues to ignore historic properties such as TCPs in its latest draft study report. Revised Draft Study Report 6 at 1-24. The final study report on land use plans and conflicts must include TCPs in the list of impact topics.*

**UDWRe Response:**

**TCP data was never received from the tribe so impacts could not be analyzed.**

**Chapter 2 Comments:****Kaibab Tribe Comment 1:**

(Section 2.2)

*The Kaibab Tribe previously commented that the UBWR failed to account for tribal data and resource management goals. 2011 Comments at 15-16. In response, the latest draft study report states that the UBWR contacted the Kaibab Tribe in 2012 in order to obtain a resource management plan, and that the Kaibab Tribe anticipated completing such a plan in 2013.*

*Revised Draft Study Report 6 at 2-2. The UBWR does not describe any follow-up attempts to obtain tribal data, however. See id. at 2-1 to -2. The final study report on land use plans and conflicts must include information about any attempts by the UBWR to obtain tribal data and tribal resource management goals.*

**UDWRe Response:**

**At the time the Draft Study Report was completed the 2013 plan was not complete.**

**Kaibab Tribe Comment 2:**

(Section 2.4.11)

*The Kaibab Tribe previously commented that the UBWR cannot include tribal lands with other types of economically useless lands and categorize such lands as "undevelopable." 2011 Comments at 16. The UBWR better explained its rationale in the latest draft study report, but it continues to lump tribal lands with other types of lands that are wholly off-limits for development without explaining whether it consulted with the Kaibab Tribe on this matter. Revised Draft Study Report 6 at 2-8. No applicable regulatory constraints put Kaibab lands wholly off-limits to development, and it is within the Kaibab Tribe's discretion to permit the development of its lands. See RESOLUTION OF THE GOVERNING BODY OF THE KAIBAB BAND OF PAIUTE INDIANS, No. K-30-12 (May 17, 2012). The UBWR must reconsider its position on this important issue in consultation with the Kaibab Tribe.*

**UDWRe Response:**

**In the study area for the growth analysis there were not any tribal lands and thus none were excluded from analysis.**

### **Chapter 3 Comments:**

#### **Kaibab Tribe Comment 1:**

*(Section 3.2)*

*The Kaibab Tribe previously commented that the UBWR must include TCPs in the list of topics associated with land management plans and policies. 2011 Comments at 17. Although the UBWR uses the same list of impact topics from section 1.6 and includes National Historic Trails and many other land use topics, the latest draft study report continues to ignore historic properties such as TCPs. Revised Draft Study Report 6 at 3-1. The final study report on land use plans and conflicts must include TCPs in section 3.2.*

#### **UDWRe Response:**

**TCP data was never received from the tribe so impacts could not be analyzed.**

#### **Kaibab Tribe Comment 2:**

*(Section 3.2.1.7)*

*The Kaibab Tribe previously commented that the UBWR failed to account for tribal resource management goals. 2011 Comments at 17. The latest draft study report now states that the UBWR contacted the Kaibab Tribe in 2012 to obtain a resource management plan, and that the Kaibab Tribe anticipated completing such a plan in 2013. Revised Draft Study Report 6 at 3-5. The UBWR does not describe any follow-up attempts to obtain tribal data, however. The final study report on land use plans and conflicts must include information about the UBWR's attempts, if any, to obtain tribal data and a tribal resource management plan.*

#### **UDWRe Response:**

**At the time the Draft Study Report was completed the 2013 plan was not complete.**

### **Chapter 4 Comments:**

#### **Kaibab Tribe Comment 1:**

*(Section 4.1)*

*The Kaibab Tribe previously commented that the UBWR must apply the significance criteria to TCPs and consider the potential impacts to such properties. 2011 Comments at 18. Although the UBWR considers the same list of impact topics from sections 1.6 and 3.2, and includes National Historic Trails and many other land use topics, it continues to ignore historic properties such as TCPs in the latest draft study report. Revised Draft Study Report 6 at 4-1 to -2. The final study report on land use plans and conflicts must consider impacts to TCPs.*

#### **UDWRe Response:**

**TCP data was never received from the tribe so impacts and significance could not be analyzed.**

**Kaibab Tribe Comment 2:**

(Section 4.3)

*The Kaibab Tribe previously commented that the UBWR failed to consider the likelihood and degree of impacts to TCPs. 2011 Comments at 18. The UBWR continues to ignore impacts to TCPs in its latest draft report. See Revised Draft Study Report 6 at 4-2 to -28. The final study report on land use plans and conflicts must consider such impacts.*

**UDWRe Response:**

**TCP data was never received from the tribe so impacts and significance could not be analyzed.**

**Kaibab Tribe Comment 3:**

(Section 4.4.4.1)

*The Kaibab Tribe previously commented that the UBWR failed to account for tribal resource management goals. 2011 Comments at 19. In response, the latest draft study report states that the UBWR contacted the Kaibab Tribe in 2012 to obtain a resource management plan, and that the Kaibab Tribe anticipated completing such a plan in 2013. Revised Draft Study Report 6 at 4-39 to -40. The UBWR does not describe any follow-up attempts to obtain tribal data, however. The final study report on land use plans and conflicts must include this information.*

**UDWRe Response:**

**At the time the Draft Study Report was completed the 2013 plan was not complete.**

**Chapter 5 Comments:****Reclamation Comment 62:**

(Section 5.3.1.2, Page 5-6)

*Section 5.3.1.2 – States “The only mitigation measure to avoid indirect impacts of converting prime farmland agricultural irrigation water to raw water supply for reverse osmosis treatment would be to compensate water right holders and users for the value of their irrigation water. Agreements would be negotiated individually between the water district and water right holders/users to determine acceptable compensation.”*

*Any water conversions from AG to Municipal would also require a change application to be filed on the water rights involved. Some indirect impacts would be examined during the change application process and any approval of these conversion change applications would likely include conditions to limit the indirect impacts.*

*Note: (A change is needed every time and AG WR is converted to municipal use. Reclamation would not likely be involved in the AG conversions described in this PLP, but the municipalities and various nearby water users would be involved.)*

**UDWRe Response:**

**The comment has been noted.**

**Kaibab Tribe Comment 1:**

*The UBWR describes the mitigation measures and monitoring activities it will implement to avoid and minimize impacts to land use for each of the pipeline alternatives, but the UBWR does not include measures to avoid and minimize potential impacts to TCPs. Revised Draft Study Report 6 at 5-1 to -6. The UBWR must consult with the Kaibab Tribe regarding mitigation measures to avoid and minimize impacts to TCPs, and the final study report on land use plans and conflicts must include such measures.*

**UDWRe Response:**

**TCP data was never received from the tribe so impacts could not be analyzed.**

**Chapter 6 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 6.1)*

**Water Conveyance System, Hydro System, Kane County Pipeline, Transmission Lines Alternative, and Natural Gas Pipeline and Generators Alternative**

*The UBWR states examines the unavoidable adverse impacts from the construction, operation, and maintenance of the Lake Powell Pipeline Project, Revised Draft Study Report 6 at 6-1 to -2, but it does not look at such impacts to TCPs. The final study report on land use plans and conflicts must consider the potential for unavoidable adverse impacts to TCPs.*

**UDWRe Response:**

**TCP data was never received from the tribe so impacts could not be analyzed.**

**Kaibab Tribe Comment 2:**

*(Section 6.1.1)*

*In determining unavoidable adverse impacts, the UBWR states that the Existing Highway and Southeast Corner Alternatives would permanently affect the ownership or management of various private and public lands, respectively, Revised Draft Study Report 6 at 6-1, but it does not mention any affects to tribal lands. The Existing Highway and Southeast Corner Alternatives would both impact Kaibab lands, and the final study report on land use plans and conflicts must describe any impacts this would cause to the management of tribal lands.*

**UDWRe Response:**

**At the time the Draft Study Report was completed the 2013 plan was not complete. Thus, impacts to tribal management of lands could not be undertaken.**

**Abbreviations and Acronyms Comments:**

**Reclamation Comment 61:**

*(Section A&A, Page A&A-2)*

*The Acronym table shows UBWR “Utah Bureau of Water Rights”. There is no bureau of water rights. It should probably be UDWR “Utah Division of Water Rights”*

**UDWRe Response:**

**The text has been revised to address the comment.**

## **Draft Study Report 7 – Noise:**

***General Comments:***

**NPS Comment 1:**

**NPS Night Sky and Sound Scapes Comments**

*The NPS has concern about the analysis of noise impacts in Draft Study Report 7. It takes a narrow view of noise impacts on humans, based almost solely on Occupational Safety and Health Administration (OSHA) occupational (workplace) sound level criteria that are intended to prevent long-term hearing loss. Sound levels that are high enough to induce hearing loss are arguably inappropriate for any park visitor. Furthermore, other regulatory criteria could be argued; for example, unreasonable noise levels (36 CFR 2.12) or assessment of audible effects on historical/cultural resources (36 CFR 800.5).*

*The noise analysis predicts high noise levels for various components, including pumps. At minimum, we ask that the following sites be considered as sensitive receptors for specific noise analysis, and mitigation, where needed:*

- *Boat accessible lakeshore adjacent to proposed intake pump station*
- *GLCA entrance gate adjacent to pump station (visitors may be expected to have vehicle windows down) Carl Hayden Visitor Center and parking lot*
- *Any nearby walkways or observation areas accessible to park visitors*

**UDWRe Response:**

**The areas identified in the comment have been noted as sites with sensitive receptors.**

**NPS Comment 5: (Note: No NPS General Comments 2, 3, or 4 for SR-7)**

*Location of the pumps in enclosed within a structure will likely mitigate much of the noise from the pumps and other machinery. In many cases, simple additions like acoustic enclosures or acoustic insulation would increase the effectiveness of the structure as a noise barrier.*

**UDWRe Response:**

**The comment has been noted.**

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 7: Noise (Nov. 30, 2015) ("Revised Draft*

*Study Report 7") fails to address most of the Kaibab Tribe's previous comments on earlier drafts of the noise study report. See 2012 Comments at 4-7; 2011 Comments at 20-25. The UBWR states that Revised Draft Study Report 7 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete.*

*Revised Draft Study Report 7 is noncompliant with Study Plan 7 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**The comment has been noted.**

***Executive Summary Comments:***

**NPS Comment 0:**

*(Executive Summary, Page ES-1)*

*Report states: "The significance criteria for the LPP project were based on permissible noise exposure as defined by OSHA. A 90 A-weighted decibel (dBA) sound level was chosen as the significant impact level on humans as OSHA allows up to 8 hours per day at a 90 dBA exposure level. Impacts of noise on wildlife are difficult to quantify as most studies pertain to loud noises, and it appears that many species become tolerant of sound over time and resume use of habitat that may have been initially abandoned even as the noise continues. Therefore, a sound intensity of 60 dBA was chosen as the impact level for potential reduction of habitat value for wildlife. The following sections summarize the key results of the noise impact analyses."*

**UDWRe Response:**

**The comment has been noted.**

**NPS Comment 1:**

*(Executive Summary, Page ES-1)*

*Using the OSHA threshold for work sites is reasonable in that context, as it ensures that workers' are adequately protected from hearing loss, but it does not account for the observed response to noise from visitors in national parks, and is inadequate to protect the visitor experience in a national park. This standard does not address the broad array of potential affects to humans. Humans can experience stress, interruption of speech, interference with ability to hear, and annoyance. Studies have shown that visitor annoyance and interference with natural conditions from certain noise sources begins to occur at much lower sound levels [Anderson, Grant S., A .S. Rapoza, G.G.Fleming, and N.P.Miller. (2011) "Aircraft noise dose- response relations for national parks" Noise Control Eng. J. 59 (5), September-October 2011). Please consider incorporating these concepts into the analysis on soundscapes.*

**UDWRe Response:**

**Noise from the project is not expected to reach national park areas. In the event that noise does reach national park areas it will be temporary in nature and thus not a significant impact to national parks and most recreation. Noise will impact GSENM and Glen Canyon Recreation Area which has been considered.**



**NPS Comment 2:**

*(Executive Summary, Page ES-1)*

*Occupancy of an area does not necessarily signal "no impact" for wildlife, and a growing body of literature suggests that "behavioral modifications among individuals confronted with noise - even those individuals that outwardly appear to habituate- can lead to decreased fitness" [Francis, C. O. and Barber, J. R. (2013), A framework for understanding noise impacts on wildlife: an urgent conservation priority. *Frontiers in Ecology and the Environment*, 11:305-313.doi:10.1890/120183). A recent comprehensive review of studies documenting the effects of noise on wildlife showed that wildlife responses to noise begin at about 40 dBA. Studies also show that wildlife are affected by noise in many ways. In addition to leaving a habitat, biological responses also include other types of movement (fleeing, distribution), physiologic (stress, hearing loss), fitness (survival, fecundity), mating (attraction, pairing), foraging (predation, foraging rate), vigilance, vocal behavior (shifts in call type, length, frequency), and inter-species communication. [Shannon, G., M.F. McKenna, L.M. Angeloni, K.R. Crooks, K.M. Fristrup, E. Brown, K.A. Warner, M.D. Nelson, C. White, J. Briggs, S. McFarland, and G. Wittemyer. (2015) "A synthesis of two decades of research documenting the effects of noise on wildlife." *Biological Reviews* DOI:10.1111/brv. 12207.)*

**UDWRe Response: (MWH)**

**It is likely that noise levels of over 40dBA will frequently occur naturally as observed and documented in the field noise investigations information contained within the study report. It has been noted that there may be some sensitive species that could be potentially affected, however this is not expected to be significant, especially as it relates to the short duration of the construction. Wildlife nuisances are not covered in depth in the Noise Study Report but are covered in greater detail in the Final Study Report 21 – Wildlife Resources.**

**NPS Comment 3:**

*(Executive Summary, Page ES-1)*

*Please clarify how the impact levels will be measured by describing the metric that will be assessed and the time over which it will be assessed, and where it will be measured.*

**UDWRe Response:**

**Additional details regarding the levels measured and the metric that will be assessed are in the body of the text rather than the executive summary.**

**Chapter 1 Comments:****NPS Comment 4: (UBWR Note: No NPS Comments 1, 2, or 3 in Chapter 1 of SR-7)**

*(Section 1.2.1, Page 1-3)*

*NPS interest in noise impacts are in the vicinity of the intake site. It looks like most machinery is enclosed in a building but there is not mention in the description of the pump enclosure of how sound will be managed. The addition of new sound should be weighed against natural ambient conditions, existing ambient conditions, potential wildlife in the area, and visitor annoyance. A more conservative significant impact level should be used for humans. Studies have shown that*

*visitor annoyance and interference with natural conditions from certain noise sources begins to occur at much lower sound levels [Anderson et al. 2011].*

**UDWRe Response:**

**Sound attenuation, locating the pumps within an enclosed building, and noise muffling will be used with regards to the installation of the pumps and will be included in the text.**

**Kaibab Tribe Comment 1:**

*(Section 1.5.2)*

*The Kaibab Tribe previously commented that tribal concerns were not identified and properly considered. 2011 Comments at 20. For example, section 3.1 (Impact Area) states that areas of cultural sensitivity may be adversely affected and will be studied, but the UBWR has not identified this as an issue in its latest draft report. See Revised Draft Study Report 7 at 1-23 to -24. The final study report on noise must identify impacts on TCPs as an issue requiring further study.*

**UDWRe Response:**

**Tribal management goals were considered during the analysis. Correspondence with Tribal leaders regarding the potential for noise was undertaken in order to identify any specific concerns. Cultural resources were not part of the noise analysis but are not expected to be significantly impacted by the temporary noise from the project.**

**Chapter 2 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 2.2)*

*The Kaibab Tribe previously commented that the UBWR did not list any data sources related to TCPs. 2012 Comments at 4. Although section 3.1 (Impact Area) states that areas of cultural sensitivity may be adversely affected and will be studied, the latest draft study report does not address the Kaibab Tribe's prior comments. See Revised Draft Study Report 7 at 2-1. The final study report on noise must indicate which data sources it used with respect to TCPs and other tribal concerns.*

**UDWRe Response:**

**Tribal management goals were considered during the analysis. Correspondence with Tribal leaders regarding the potential for noise was undertaken in order to identify any specific concerns. Cultural resources were not part of the noise analysis but are not expected to be significantly impacted by the temporary noise from the project.**

**Kaibab Tribe Comment 2:**

*(Section 2.3)*

*The Kaibab Tribe previously commented that the UBWR did not adequately support its assumptions and did not address the concerns that are unique to the Kaibab Tribe. 2012 Comments at 4-5; 2011 Comments at 21-22. The UBWR has not addressed these comments in its latest draft report, see Revised Draft Study Report 7 at 2-3 to -4, but must do so in its*

*final study report on noise.*

**UDWRe Response:**

**The Kaibab Tribe concerns have been reviewed and considered. The comment has been noted.**

**Kaibab Tribe Comment 2:**

*(Section 2.4.4)*

*The Kaibab Tribe previously commented that the UBWR cannot simply assume without support that maintenance activities will consist of only traffic noise. 2012 Comments at 5; 2011 Comments at 22. The UBWR has not changed or provided support for this assumption in the latest draft study report. See Revised Draft Study Report 7 at 2-6. The final study report on noise must address the Kaibab Tribe's prior comments.*

**UDWRe Response:**

**Review of the expected operational activities indicates they will overwhelmingly be inspection and random small maintenance tasks which will create little or no additional noise outside of the facility boundary.**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 3.2.1)*

*The Kaibab Tribe previously commented that certain noise level comparisons belied common experience. 2012 Comments at 5-6; 2011 Comments at 22. The UBWR has not revised or explained its noise comparisons in its latest draft study report. See Revised Draft Study Report 7 at 3-1 to -3. The final study report on noise must address the Kaibab Tribe's prior comments.*

**UDWRe Response:**

**The comment has been noted.**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 4.1.1)*

*The Kaibab Tribe previously commented that the UBWR did not adequately the impacts of construction noise on nearby tribal employees and visitors. 2012 Comments at 6; 2011 Comments at 22-23. The UBWR has still not meaningfully addressed the Kaibab Tribe's previous comments in its latest draft study report, however. See Revised Draft Study Report at 4-1 to -2. The final study report on noise must explain what avoidance and mitigation measures will be taken for the protection of tribal employees in the vicinity of the pipeline project and visitors to the Kaibab Indian Reservation.*

**UDWRe Response:**

**The impact to visitors will be similar to residents and will be short term in nature due to the rapid installation and movement of the pipe installation. Additional mention of impacts to visitors was included in the text. Avoidance and mitigation measures were adequately discussed in the study.**

**Kaibab Tribe Comment 2:**

*(Section 4.1.1.1)*

*The Kaibab Tribe previously commented that the UBWR was dismissive of and did not give adequate consideration to the impacts of construction noise on tribal employees and visitors to the Reservation. 2012 Comments at 6. The UBWR has still not explained how it will address the Kaibab Tribe's concerns in its latest draft report, see Revised Draft Study Report 7 at 4-3, and it must do so in the final study report on noise.*

**UDWRe Response:**

**The text has been edited to include additional clarification and detail.**

**Kaibab Tribe Comment 3:**

*(Section 4.1.2)*

*The Kaibab Tribe previously commented that the UBWR was dismissive of and did not give adequate consideration to the effects of construction noise on wildlife. 2012 Comments at 6-7; 2011 Comments at 23. The UBWR has not given any additional consideration to such effects in its latest draft report. See Revised Draft Study Report at 4-3. The final study report must address the Kaibab Tribe's prior comments.*

**UDWRe Response:**

**It has been noted that there are some sensitive species that could potentially be affected; however, the nuisance levels at which they could be affected is not covered under this resource but it is not expected to be a significant impact.**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*The Kaibab Tribe previously commented that best management practices and mitigation measures must be developed in consultation with the Kaibab Tribe in order to offset the effects of construction noise on the Reservation 2011 Comments at 25. In response, the latest draft study report simply states that the Kaibab Tribe did not request any mitigation measures. Revised Draft Study Report 7 at 5-1. This is not an adequate reason to ignore tribal concerns and does not tell the whole story. The final study report on noise must describe the specific efforts it made to meaningfully consult with the Kaibab Tribe in order to obtain tribal input on the issue of noise.*

**UDWRe Response:**

There are BMPs that have been identified to mitigate the effects of the temporary construction noise on the nearby receptors. This will be an ongoing effort during the construction planning and performance to determine the most effective BMPs. The intent of the study report text was not to indicate that the Kaibab Tribe did not request any mitigation measures, rather, that no special mitigation measures were requested by Tribal of other than to address the Comprehensive Cultural Ecology Ordinance of the Kaibab Band of Paiute Indians and to meet Federal and State standards. Several communications were held with Tribal representatives including Leann Skrzynski (April 2009), Maureen King (April 2009) and Leann Skrzynski (August 2011).

## **Draft Study Report 8 – Paleontological Resources:**

### ***General Comments:***

#### **Kaibab Tribe Comment 1:**

*The revised Draft Study Report 8: Paleontological Resources (Nov. 30, 2015) ("Revised Draft Study Report 8") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the paleontological resources study report. See 2011 Comments at 25-26. In addition, the UBWR states that Revised Draft Study Report 8 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBWR also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data, information and associated impact analyses performed will be updated in revised draft study reports and filed with the Commission as soon as they are completed." Id. The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study report after they are revised further. As it stands, however, Revised Draft Study Report 8 is substantially incomplete, and the Commission should remand the report to the UBWR for further revisions that are consistent with these comments and that fill in the substantial information gaps.*

#### **UDWR Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

## **Draft Study Report 9 – Recreation Resources:**

### ***Cover Sheet:***

#### **BLM Comment 1:**

*Says 'Revised November 2017' – shouldn't it be November 2015?*

#### **UDWR Response:**

**The text has been revised to address the comment.**

## **General Comments:**

### **Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 7: Recreation Resources (Nov. 30, 2015) ("Revised Draft Study Report 9") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the noise study report. See 2011 Comments at 26-28. In addition, the UBWR states that Revised Draft Study Report 9 "will be updated when CRSS and Virgin River Daily Simulation Model (VRDSM) results are incorporated and coordination with federal agencies on LPP Project draft management plans in preparation are completed, "...and it promises to file a final study report in April 2016 that addresses the comments received here as part of its license application, PLP at P-2, but this is insufficient. The Kaibab Tribe must have an opportunity to comment on the pending modeling results prior to their inclusion in a "final" report. As it stands, Revised Draft Study Report 9 is substantially incomplete and noncompliant with Study Plan 9, and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

### **UDWRe Response:**

**UDWRe's view is that Final Study Report 09 – Recreation Resources complies with Study Plan 9.**

## **Chapter 1:**

### **BLM Comment 2:**

*(Page 1-23)*

*Identified issues - Add Old Spanish National Historic Trail impacts to list of identified issues. The South Alternative, Southeast Corner Alternative and natural gas pipeline route all will impact the Armijo Portion (Southern Route) of the Old Spanish National Historic Trail. The South and Southeast Corner alternatives follow the Armijo Route almost exactly in both Utah and Arizona.*

### **UDWRe Response:**

**The text has been revised to address the comment.**

## **Chapter 3:**

### **BLM Comment 3:**

*(Page 3-5)*

*Second to last paragraph - GCNRA, Grand Staircase-Escalante National Monument should be changed to GCNRA, Glen Canyon National Recreation Area*

### **UDWRe Response:**

**The text has been revised to address the comment.**

### **BLM Comment 4:**

(Section 3.2.3, Page 3-7)

**3.2.3 Paria Canyon - Vermilion Cliffs Wilderness**

*The BLM's Kanab Field Office manages this designated wilderness for the use and.... Should be changed to The BLM's Kanab and Arizona Strip field offices manage this designated wilderness area for the use and....*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 5:**

*(Page 3-10)*

*The Honeymoon Trail is NOT located with the Grand Staircase-Escalante NM. It is located on the Arizona Strip District and St. George Field Office.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 6:**

*(Page 3-20)*

*Cottonwood Points Wilderness - BLM's Canaan Mountain WSA should be changed to Canaan Mountain Wilderness. Then delete this part of that sentence, "which has been recommended for wilderness designation."*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 7:**

*(Section 3.2.6.5, Pages 3-10, 3-20, and 3-22)*

**3.2.6.5 Historic Trails**

*Change "Old Spanish Trail" to Old Spanish National Historic Trail. Add Arizona National Scenic Trail to this list and change caption of this section to "Historic and Scenic Trails." Do a global search and replace for Old Spanish NHT.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**BLM Comment 8:**

*(Page 3-21)*

*Fredonia-Vermilion Cliffs Scenic ~~Drive~~ Road*



*Fredonia is a western point of departure for the ~~Highway 89 and Highway 89A~~ loop (BLM, 2009) of the Fredonia-Vermilion Cliffs Scenic Road, which has been designated a scenic road by the Arizona Department of Transportation.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 9 will be updated with pending information and modeling results, PLP at P-2, this chapter must be considered incomplete. The final study report on recreation resources must include the additional information and modeling results, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**UDWRe's view is that Final Study Report 09 – Recreation Resources complies with Study Plan 9.**

**Kaibab Tribe Comment 2:**

*(Section 4.1)*

*The Kaibab Tribe previously commented that the UBWR improperly substituted a different criterion to determine if impacts will be "significant" than the criterion set forth in Study Plan 9, and that application of a different criterion invalidated much of the draft study report. 2011 Comments at 26-27. The latest draft study report continues to use the same criterion that differs from Study Plan 9, however. See Revised Draft Study Report 9 at 4-1. The final study report on recreation resources must apply the significance criterion set forth in Study Plan 9.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Kaibab Tribe Comment 3:**

*(Section 4.2.2.3)*

*The Kaibab Tribe previously commented that the UBWR did not consider the impacts of construction traffic and noise on recreational facilities located within the Reservation, as it did for Pipe Spring National Monument and other recreation resources. 2011 Comments at 27. The UBWR did not address the Kaibab Tribe's comments in its latest draft study report. See Revised Draft Study Report 9 at 4-19 to -20. The final study report on recreation resources must discuss the impacts of traffic and noise on Kaibab recreational facilities such as the Kaibab Tribe Campground and RV Park.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*The UBWR describes the standard construction procedures it will implement during the construction, operation, and maintenance of the Lake Powell Pipeline Project, including for the Existing Highway Pipeline Alternative and Southeast Comer Pipeline Alternative. Revised Draft Study Report 9 at 5-1 to -3. The UBWR is required to consult with the Kaibab Tribe regarding such mitigation measures, however, and the final study report on recreation resources must acknowledge this obligation.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Chapter 6 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 6.2.2.12)*

*The Kaibab Tribe previously commented that the UBWR should consider the impacts of air pollution and traffic on visitors to the Kaibab Tribe Campground and RV Park, as it did for visitors to the nearby Pipe Spring National Monument. 2011 Comments at 27-28. The latest draft study report continues to omit this information in the analysis of unavoidable adverse impacts, however. See Revised Draft Study Report 9 at 6-2. The final study report on recreation resources must address the unavoidable adverse impacts to recreational facilities within the Kaibab Indian Reservation.*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Chapter 7 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 7.1.1)*

*This section states that "Indian Reservations were established in the region between 1913 and 1917." Revised Draft Study Report 9 at 7-2. The Department established the Kaibab Indian Reservation in 1907, however, when it withdrew certain lands "for the use of the Kaibab and other Indians." See Letter from C. F. Larrabee, Acting Comm'r, Dep't of Interior, Office of Indian Affairs, to Sec'y of Interior at 1 (Oct. 15, 1907), approved by Thomas Ryan, First Assistant Sec'y (Oct. 16, 1907). The 1913 and 1917 Executive Orders that the UBWR is apparently referencing merely gave formal sanction to the Department's 1907 withdrawal. See *United States v. Walker River Irrigation Dist.*, 104 F.2d 334, 338-39 (9th Cir. 1939) (Executive Order issued fifteen years after Department withdrew lands for Walker River Indian Reservation merely gave formal sanction to prior act, so Reservation*

*was established when land was first withdrawn). Thus, the UBWR must correct this section so that the final study report on recreation resources indicates that the Kaibab Indian Reservation was first established in 1907.*

*This section also ignores the pre-existence of Indian people in the region by stating that the historic period "began with early exploration by Spanish explorers." Revised Draft Study Report 9 at 7-1. The final PLP should clarify that this was the beginning of European-American history in the region, which was preceded by the presence of Indian people in the area since time immemorial.*

**UDWRe Response:**

**The text has been revised to address the comment.**

## **Draft Study Report 10 – Socioeconomics & Water Resource Economics:**

***General Comments:***

**Reclamation Comment 51:**

*(Section ES.1.1.1, Page ES-2 and General Comments)*

*It looks like they did a fair job of following the 1983 P&Gs. I found this heavy on elementary background information and somewhat light on what the actual effects would be on the area with or without the project.*

*Some specific comments: Page ES-2, second bullet it states the "The LPP Project is part of the water resources infrastructure that is needed to accommodate growth" that is one opinion and is not part of the science associated with socio-economics. Recommend removing the first sentence.*

*With a B/C analysis I would like to see where the money is going to come from and what the pricing strategy will at least look like as to who pays what and how it will actually affect individual household water bills. Can the community afford the project based on things like the EPA threshold of affordability?*

*What are residents currently paying for water?*

*How will this project drive or allow economic development that may not be possible under a without scenario?*

*Will pipe, equipment, and labor be sourced locally, or is everything going to be shipped in from elsewhere which does less to benefit the local economy?*

**UDWRe Response:**

**The study report refers to the “accommodating growth” as a piece of infrastructure and no development bias is intended; the project facilitates growth, but it does not drive growth.**

**The Districts's pricing and fiscal information for water delivery is not a part of the study report, but this information is being developed by the Districts and UDWR.**

**The study report RED section provides an estimate of the in-state versus out-of-state goods and services purchases, the total value of state output relative to the Project.**

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report JO: Socioeconomics and Water Resource Economics (Nov. 30, 2015) ("Revised Draft Study Report 10") fails to address most of the Kaibab Tribe's previous comments on earlier drafts of the noise study report. See 2012 Comments at 7-9; 2011 Comments at 28-30. In addition, the UBWR states that Revised Draft Study Report 10 "will be updated with pending information and modeling results" from Reclamation, and that "these modeling results will affect other resources included in the listed study reports," and it promises to file a final study report in April 2016 that addresses the comments received here as part of its license application, PLP at P-2, but this is insufficient. The Kaibab Tribe must have an opportunity to comment on the pending information and modeling results prior to their inclusion in a "final" report. As it stands, Revised Draft Study Report 10 is substantially incomplete and noncompliant with Study Plan 10, and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWR Response:**

**Most of the questions/information related to this comment are not a part of the study report subject matter (other resource areas)—this is the subject of the other study reports. The study reports will be revised to respond to the Kaibab Tribe's comments.**

**Kaibab Tribe Comment 2:**

*(Section ES-1.1.1NED)*

*The Kaibab Tribe previously commented that the UBWR must correct the estimated cost figures for the pipeline project, which figures the UBWR acknowledged are "misstated." 2012 Comments at 8 (citing Letter from Dennis J. Strong, Director, Utah Div. of Water Res., to Kimberly D. Bose, Sec'y, Fed. Energy Regulatory Comm'n, Attachment B at 102 (July 29, 2011)); 2011 Comments at 29. The UBWR has still not corrected these figures in its latest draft report. See Revised Draft Study Report 10 at ES-2. The final study report on socioeconomics and water resource economics must contain the correct figures.*

**UDWR Response:**

**Appendix B of the study report contains the revised cost estimates for the LPP Project, including all construction components.**

**LPP Coalition Comment 1:**

*In Scoping Document 2, the Commission stated that scoping was intended to serve as a guide to issues and alternatives to be addressed in the Environmental Impact Statement (EIS). The public expressed concerns in the scoping process that should be addressed in the EIS.*

*“As shown in both the transcripts of the scoping meetings and in Appendix A, many individuals have provided either oral or written scoping comments, or both, concerning the Lake Powell Pipeline proposal. Many of the public comments express similar concerns or issues:*

*The estimated cost of the pipeline is increasing and little is known about how the final cost of the pipeline will affect fees and the taxes and rates paid by water users.”<sup>10</sup>*

*UBWR has not answered the question of what fees, taxes and rates will have to increase to pay for the Project in the PLP. The Commission Staff must assure this issue be address in the PLP.*

<sup>10</sup> “Scoping of Environmental Issues for the proposed Lake Powell Pipeline Project,” eLibrary no. 20080821-3005 (Aug. 21, 2008), p.7

#### **UDWRe Response:**

**A financing plan is premature at this stage. First, as discussed elsewhere [cross cite], the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

**The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:**

**73-28-402 Agreement for delivery -- Period for repayment of costs.**

- (1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**
- (2) If a contract was made before the project’s completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**
  - (a) The delivery of developed water to the district during the first 10 years after the project is completed; or**
  - (b) The project’s completion for any developed water delivered to the district after the tenth anniversary date of the project’s completion.**
- (3) If a contract was made after the project’s completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**
- (4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

#### **LPP Coalition Comment 2:**

##### **2011 Commenting Process**

Also, UBWR has not included FERC's requests from 2011 commenting process. They include:

Figure 1. FERC Questions and UDWR Responses<sup>1</sup>

<b>FERC comment</b>	<b>DWR response</b>	<b>Current study report 2015</b>
FERC C20: Preliminary Opinion of Probable Capital Costs (MWH 2009) should be included as an appendix to the study rpt and construction, O, and M costs clearly stated in the body of the rpt for proposed project	Final study rpt will include these revisions.	Still not included
FERC C21: Chapter 5 should be corrected in the final report to include pumped storage development in analysis of project and analysis of <u>pumped storage effects on proposed project's</u>	Final study rpt will include revisions.	Still not included
FERC C26: Ch 5 draft study rpt NED analysis tables 5-1 thru 5-4 <u>need descriptions of each b/c line items to help reader understand methods</u>	Final study rpt will include these revisions.	Still not understandable and is the same as 2011 study report
FERC C29: Draft study rpt <u>lacks project financing and cost allocations to Districts and lacks user costs. Need current user costs and evaluation of increased user</u>	Final study rpt will include these revisions.	Still not included

**UDWRe Response:**

**The license application will fulfill the study plan recommendations.**

**Appendix B of the study report includes the revised OPPC estimates in detail (MWH 2016). The study report notes that UDWRe's consultant has reviewed several sources (other projects) for estimates of the OM&R components; for analysis purposes here, PV OM&R is estimated to be equivalent to 8% of the PV construction costs, with contingencies (Chapter 2), and the hydropower system PV OM&R is estimated at 12% of the direct construction costs.**

The pumped storage facility development phase is illustrated by the B/C analysis methodology time line in Appendix A of the study report, and the pumped storage project is expected to be developed during the same general time frame as the LPP Project.

Chapter 2 and Appendix A of the study report provide a description of all the B/C components and timing factors, and Appendix B provides a detailed description of the construction components in the analysis.

The Districts' pricing and fiscal information for water delivery is not a part of the study report, but this information is being developed by the Districts and UDWR.

### LPP Coalition Comment 3:

#### Study Plan: Section 10.2.1 Primary Goals and Objectives

- “Provide a clear picture of Project economic benefits and costs
- A comparison to Project alternatives
- Determine the cost-effectiveness of the Project, and compare the relative costs of new water supplies for the alternative configurations; describe the costs and cost- effectiveness of the baseline condition.
- Determine Project (and alternatives) marginal costs and cost allocations to the Water Conservancy Districts.”<sup>12</sup>

UBWR did not provide these goals and objectives in the Study Report. UBWR must provide the plan to finance the Project and show its ability to implement the plan together with a repayment schedule. We do not believe that the Commission Staff can complete a valid cost/benefit analysis on the conflicting incorrect data provided by UBWR to date. We are also very concerned that UBWR has not disclosed its cost/benefit analysis to the ratepayers who will be responsible for paying for this billion dollar water project.

<sup>11</sup>Draft Study Report 10: Socioeconomics and Water Resource Economics, Attachment B. Lake Powell Pipeline Project, July, 2011 eLibrary 20110728-4143, 7-28-2011, ILP UBWR Responses to Draft Study Reports

<sup>12</sup> Socioeconomics Water Resource Economics Study Plan, p.78, (emphasis added)

### UDWR Response:

A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

The LPP will be funded and repaid according to the terms expressed in the Lake Powell Pipeline Development Act:



**73-28-402 Agreement for delivery -- Period for repayment of costs.**

- (1) The board and each district shall establish by contract the timing and amount of developed water to be delivered to the district.**
- (2) If a contract was made before the project's completion, the district shall repay the preconstruction and construction costs within 50 years from the date of:**
  - (a) The delivery of developed water to the district during the first 10 years after the project is completed; or**
  - (b) The project's completion for any developed water delivered to the district after the tenth anniversary date of the project's completion.**
- (3) If a contract was made after the project's completion date, the district shall repay the preconstruction and construction costs within a period not to exceed 50 years from the date that the contract was made.**
- (4) The board shall establish and charge a reasonable interest rate for the unpaid balance of reimbursable preconstruction and construction costs.**

**LPP Coalition Comment 4:**

**Study Plan: Section 10.3 Agency Resource Management Goals**

- *“Confirm the supply and cost-effectiveness of the Project and alternatives.*
- *Ensure Project consistency with regional planning efforts.*
- *Determine the marginal costs of water and water delivery.*
- *In terms of new supply options and marginal costs, consider the general economic impacts to the Districts and to the state; clarify the likely fiscal impacts.*
- *Identify the net economic impacts associated with the loss of power generation at Glen Canyon Dam; including any fiscal impacts to the regional power system (CRSP power rates).*
- *Impact estimates will cover any power losses at the power plant from energy/peaking.*
- *Power losses and the costs of replacement power.*
- *Impact estimates will be determined for water system pumping and distribution.*
- *Identify whether regional acceptance or rejection of new water supplies from Colorado River is an issue of public concern.*
- *Provide an accounting of the state's Colorado River water rights allocation assigned to the Project; determine whether the state perceives other allocation (water right use) options separate from the Project.”<sup>13</sup>*

*UBWR did not address the issues required by the approved Study Plan, as listed above. Consequently, UBWR varied from the specific requirements of the approved Study Plan. We request that the Commission direct UBWR to file a supplemental report that addresses these issues.*

<sup>13</sup> *Study Plan, p. 79, (emphasis added)*

**UDWRe Response:**

**The license application will fulfill the study plan recommendations.**

All of the benefit/costs analysis components, marginal cost resources, and alternative cost resources are clearly identified within the study report; including all Project foregone power and power pumping costs.

Districts' pricing and fiscal information for water delivery is not a part of the study report, but this information is being developed by the Districts and UDWR.

**LPP Coalition Comment 5:**

**Study Plan: Section 10.4.3 Issues and Data Needs**

- *“Availability and costs of new electric power supplies directly related to Project operations; and power supply forecasts for the region under different growth scenarios—integration with NED analyses.*
- *Cost allocations among existing and new water users; including the likely impacts of user costs under different development timing phases—who pays and when.*
- *Potential fiscal impacts on the State of Utah for funding (bonding) the Project; changes to costs of capital for the state or affect on capital allocation to other major state infrastructure projects.*
- *An accounting of the State's Colorado River water rights allocated to the Project; any potential water right impairment issues*
- *Reviewing existing marginal cost data for West-wide water resources projects, including conservation costs.”<sup>14</sup>*

*UBWR did not address the issues required by the approved Study Plan, as listed above. Commission Staff should direct UBWR to supplement the Study Report with this information prior to proceeding with EIS preparation.*

<sup>14</sup> Study Plan, p. 82, (emphasis added)

**UDWR Response:**

All power cost information has been included in Chapters 2 and 6 of the study report (detailed regional power costs and values).

Study Plan items will be addressed in the license application with the exception of items still waiting for data and analysis from outside agencies. Items required by the Study Plan will be addressed in the final study reports and the license application.

***Executive Summary:***

**LPP Coalition Comment 1:**

*(Executive Summary, Page ES-1)*

**ES-1.1.1 NED or State Direct Economic Impacts Perspective**

*“Overall, the LPP Project displays greater benefits than costs given the complex set of economic variables and assumptions under consideration. Depending on economic perspectives and assumptions, the LPP Project direct net benefits range from about \$1.8 to \$2.7 billion, and the LPP Project costs range from about \$1.8 to \$2.7 billion (2010\$, present value). The cost and benefit ranges are exactly the same.”<sup>15</sup>*

*We do not understand how UBWR can simultaneously claim benefits greater than costs when the costs and benefit ranges are exactly the same. We request that Commission Staff direct UBWR to provide further explanation. The NED analysis is not understandable. It lacks the evaluation of the willingness of residents to pay for the increase of goods and services attributable to the higher fees they will have to pay for this water project. For instance, water fees will have to be raised in St. George City to pay for the Project’s water. According to their web page the cost of water per 1000 gals over 5000-10,000 gals is \$0.78.*

<sup>15</sup> *State Direct Economic Impacts Perspectives (ES-1.1.1 NED), p. ES-2, (emphasis added)*

#### **UDWRe Response:**

**The NED and descriptive information in the study report has been revised. The NED values were based on existing construction and regional market power costs. The WCWCD determines independently whether water user costs are reasonable relative to the LPP Project or the other water supply alternatives included in the study report.**

**A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.**

#### **LPP Coalition Comment 2:**

*(Executive Summary, Page ES-1)*

##### **ES-1.1.1 NED or State Direct Economic Impacts Perspective**

*In Study Report No.10, on chart 5-172 B, it states that 1,000 gallons of water from the Project will cost \$3.34. Therefore, water rates will have to increase by four fold to cover the increase in cost of 1000 gallons of water. As water rates go up people will use less water and this should be included in the analysis. Other rates will go up as well for instance; the City of St. George monthly base rate for water is \$24.72 for 5000 gallons. If the city has to pay \$3.42 per 1000 gallons, then the city will lose funds to pay for water service expenses. Presently cities have minimal costs for water. However, at a rate of \$3.34 per 1000 gallons for the Project’s water, 5000 gallons would cost \$16.70. Consequently, the city will lose \$16.70 from their base rate to pay for their increased cost of water. Then the city will have to raise rates as well to have enough operating revenue in their water fund. Commission Staff should direct UBWR to disclose these impacts to ratepayers in a supplement to this Study Report.*

**UDWRe Response:**

The \$/1,000 gallons included here is based on the economic analysis, levelized costs. This is not the same thing as the financial costs that water users would be paying. However, as noted in the study report, it is certain that new water supply costs, regardless of the supply alternatives, will lead to some higher water delivery costs.

A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

**LPP Coalition Comment 3:**

*(Executive Summary, Page ES-1)*

**ES-1.1.1 NED or State Direct Economic Impacts Perspective**

*Additionally, the NED analysis does not include the (1) time horizon for project benefits; nor (2) the annual pumping costs; (3) or the deferred installation costs, or (4) the cost of pumping structure; or the cost of new transmission lines and improvements at the Glen Canyon Switch yard. Most importantly, there is no Risk Analysis. The primary risk is a measure of probability of undesirable consequences, since the 1957 water right that UBWR intends to use for the Project is a junior water right and is at risk of being subordinated to senior water rights holders as the Colorado River flows are diminished over the term of license.*

*Also, the Commission Staff commented on the Study Report No. 10 in 2011 (see “Figure 1. FERC Questions and UDWR Responses” above) that Chapter 5 of the NED analysis (Tables 5- 1 through 5-4) needed descriptions of each line item to help readers understand methods and assumptions.<sup>16</sup> However, UBWR has still not provided this explanation in the Study Report.*

<sup>16</sup> Draft Study Report 10: Socioeconomics and Water Resource Economics, Attachment B. Lake Powell Pipeline Project, July, 2011 eLibrary 20110728-4143, 7-28-2011, ILP UBWR Responses to Draft Study Reports comments. FERC comment C 26, p. 89, (emphasis added).

**UDWRe Response:**

The previous and revised study report explicitly include time horizons for all benefit and cost features, see Chapter 2 and Appendix A.

**LPP Coalition Comment 4:**

*(Executive Summary, Page ES-1)*

**ES-1.1.1 NED or State Direct Economic Impacts Perspective**

*Further, UBWR needs to better explain how the estimated costs of the pump storage project decreased significantly from a range of \$2.6 billion-\$3.2 billion to \$1.5 billion-\$1.8 billion, as reported in a letter dated December 9, 2015. This letter changes the entire cost/benefit analysis of the Project. We request that Commission Staff direct UBWR to update the analysis with a completely new supplement to the Study Report to reflect the new analysis provided on December 9.*

**UDWRe Response:**

**The comment incorrectly interpreted the Dec. 9, 2015 letter and its attachments which deal only with the cost of peaking power. The \$2.6 – \$3.2 Billion cost attributed to pumped storage is incorrect and not found in the letter or attachments.**

**The NED benefit/cost analyses have been revised in the updated study report. The ranges that are referenced reflect different discount rates under differing sensitivity analyses.**

**LPP Coalition Comment 5:**

*(Executive Summary, Page ES-1)*

**ES-1.1.1 NED or State Direct Economic Impacts Perspective**

*A letter to FERC from UBWR, dated December 9, 2015, explained the lowering of costs of the pump storage project. The letter states:*

*“In Chapter 3, Section 3.1.1.3.4 (pp.3-42 to 3-46) and Section 3.1.2.3 (pp.3-74-77) the PLP describes the facilities and operation of the Hurricane Cliffs Pumped Storage Hydroelectric Generating Station. Impacts of the facility and proposed environmental measures are described at various places in Section 3.1.3. and in relevant draft study reports. The discussion indicates that this generating station will be used for pumped storage. However, UBWR's license application is expected to include operation of this facility to generate 35 megawatts (MW) of peaking power independent of its operation as a 300 MW pumped storage project. Under operation for peaking power, water would be held the fore bay reservoir released through the power plant as demand requires. Attached are benefit/cost tables on the Lake Powell Pipeline Project with peaking power. UDWR therefore requests that any comments on the PLP regarding this project address its operation for peaking purposes under pumped storage and non-pumped storage conditions.*

*Depending on variable economic perspectives and assumptions, the LPP Project with peaking power direct net benefits range from about \$1.8 to 2.7 billion, and the LPP Project with peaking power costs range from about \$1.5 to \$1.8 billion (2010\$, present value, rounded) (see Tables 5-172A and 5-172B). Overall, the LPP Project with peaking power is displaying greater benefits than costs given the complex set of economic variables under consideration.*

*From an NED "principles and guidelines" or state direct value perspective, the LPP Project with peaking power development benefits are greater than the costs of LPP Project with peaking power construction and operation, given the life- cycle cost review conducted here (B/C ratio of about 1.20). This perspective assumes some relative escalation (2.5 percent) in monetary values between the costs of water resources development today versus other "product" costs tomorrow, and a more short-term cost-*

*of-capital factor of 4.14 percent. It also reflects relatively high marginal costs for long-term water supply resources. From a sensitivity analysis perspective (Table 5-172B), where the inter-generational benefits and costs of the LPP Project are taken more fully into consideration (social time preference discount rate percent) and the real monetary value of water, power, and construction costs are assumed to increase over the life of the LPP Project, the LPP Project with peaking power benefits exceed the costs. The B/C ratio is about 1.49. Stated differently, the value of future benefits to future residents is given more emphasis, than just consideration of the "up-front" costs of LPP Project construction, and the value of water and power is assumed to escalate in real terms."*<sup>17</sup>

*The explanation in the letter includes costs and B/C ratios that are very different from the Study Report No.10, which states:*

*"The analyses have incorporated a LPP Project configuration that includes a pump storage hydro-generation component. This LPP Project configuration has LPP Project costs of about \$2.6 to 3.2 billion, with benefits potentially in the \$2.9 to \$4.3 billion range. These estimates are preliminary in nature. The B/C ratio is about 1.14 to 1.34 depending on analysis assumptions."*<sup>18</sup>

<sup>17</sup> Utah Department of Natural Resources submits comment to the Preliminary Licensing Proposal and revised draft study reports for the Lake Powell Pipeline Project under P-12966, eLibrary 20151218-0011 (December 9, 2015), (emphasis added)

<sup>18</sup> *Socioeconomics Water Resource Economics Study Report 10, p. ES-2, (November 30, 2015) (emphasis added)*

#### **UDWRe Response:**

**The NED benefit/cost analyses have been revised in the updated study report. The ranges that are referenced reflect different discount rates under differing sensitivity analyses.**

#### **LPP Coalition Comment 6:**

*(Executive Summary, Page ES-1)*

##### **ES-1.1.2 NED or State Direct Economic Impacts Perspective**

*It is not clear if the 300 MW generated at the pump storage project is being produced as base load power. Commission Staff should direct UBWR to clarify this in a supplement to Study Report No.10. Also, it is noted in Section ES-1.1.2 that the Project power cost is greater than the market regional power costs; therefore, the power may be hard to sell to the market. This Project's cost/benefit needs to be reevaluated in a supplement to Study Report No.10.*

*Our understanding of the NED B/C ratios is that if the B/C ratio is over 1, then it is not recommended to build the project. If it less than 1 then it is efficient and building it is recommended. B/C as listed above is 1.20 and 1.49. Accordingly, in a NED evaluation, the pump storage project is not recommended to build. Also, UBWR uses 2009 cost estimates that are out of date and will increase. Further, not all the costs are included or released yet; thus how can a valid cost/benefit ratio be presented for analysis? Whatever the Project produces in power is used so it is questionable that the Project has any benefits; not including the pump storage project. UBWR needs to explain the details of its assumptions and what is included in the ratios.*



**UDWRe Response:**

The updated study report clarifies that the pumped storage project is expected to be a “capacity” type project for high load hour production and sales (although some low load hour production could occur (see Chapter 6)). The B/C represents benefits compared to costs, where a B/C ratio greater than 1.0 means that the project/alternative has positive overall benefits.

**LPP Coalition Comment 7:**

*(Executive Summary, Page ES-3)*

**ES-1.1.2 FERC’s Economic and Fiscal Impacts Perspective**

*“From a ‘true’ marginal cost perspective, the LPP Project power costs should be treated as incremental costs to the water delivery pipeline—depicting with and without hydro-project analysis. In this analysis, the costs of the water delivery system are not included as part of the hydro project. Under the pump storage configuration, the hydro project benefits are approximately equal to or greater than the costs, with the costs estimated to be about \$100/MWh. The corresponding B/C ratios would be in the 0.97 to 1.10 range (direct project benefits and costs, depending on the discount rate applied).”<sup>19</sup>*

*However, costs vary; for example, in this section the Project has a lower cost to MWh at \$42, not \$100.*

*“Page 2-5 LPP Project system power pumping costs: The direct water pumping system costs for the LPP Project are estimated to be about \$42/MWh. This takes into account some ability to pump during off-peak power demand periods. This ability varies over the life of the LPP Project.”<sup>20</sup>*

<sup>19</sup> Study Report, FERC’s Economic and Fiscal Impacts Perspective, p. ES-3 (emphasis added)

<sup>20</sup> Ibid.

**UDWRe Response:**

Your comment has been noted. The NED economic analyses have been updated in the revised study report.

**LPP Coalition Comment 8:**

*(Executive Summary, Page ES-3)*

**ES-1.1.2 FERC’s Economic and Fiscal Impacts Perspective**

*The Study Report does not acknowledge or explain the contradiction as quoted above. The Study Reports contains other contradictions later in this section, where it states that the pump storage B/C ratio is only .47 to .89. Commission Staff should direct UBWR to provide a supplement to the Study Report that explains how these numbers were derived and resolve the apparent contradictions.*

**UDWRe Response:**



**There are different sensitivity and project configuration analyses in the study report that reflect the different B/C ratios, and the analyses use different discount rates, as identified in the study report.**

**LPP Coalition Comment 9:**

*(Executive Summary, Page ES-3)*

**ES-1.1.2 FERC's Economic and Fiscal Impacts Perspective**

*We are concerned about the lack of transparency in what the Project will cost. Above all, all the elements which are needed to conduct an accurate benefit-cost and cost-effectiveness must be included and properly analyzed. This cost-benefit analysis in Study Report No.10 does not consider alternative technological solutions to water use which could be achieved through innovative efforts to meet water demand. Study Report No.10 must be supplemented and or revised to correct the data and provide missing information prior to Commission Staff preparing the EIS.*

**UDWRe Response:**

**The economic analyses in the study report rely on all known technologies for new water supply, including programmatic conservation, water markets, water use curtailment, and reverse osmosis water treatment plants. The reference to other alternative technologies in the comment is not specific. Also, the cost estimates for the alternatives have been updated in the revised study report.**

**Lisa Rutherford and Paul Van Dam Comment 78:**

*2015 Revised Draft Study Report 10- Socioeconomic-Water Resources Economics*

***Executive Summary***

***ES-1.1.1 NED or State Direct Economic Impacts Perspective (Page ES-1)***

*The Project is determined to be an infrastructure feature of population and economic growth in Southern Utah, but it is not the “driver” of growth.*

*The LPP Project would facilitate new population growth in a manner similar to other infrastructure requirements, such as roads and transportation, power and energy, housing, and other human services needs. All of these infrastructure requirements would accommodate population and economic growth in the area.*

*The LPP Project is part of the water resources infrastructure that is needed to accommodate growth. If the LPP Project is not developed, then other alternative cost water resource supplies would need to be acquired, along with an acceptance of potential changes in individual and community lifestyles affected by reduced water demand and use.*

***COMMENT***

*The Applicant states that the LPP Project would “facilitate” not “drive” growth. Definitions of “facilitate”: to make (something) easier; to help cause (something) to make easier or less difficult; help forward (an action, a process, etc.)*

*The Applicant seems to be making a pretty fine distinction and splitting hairs with regard to*

*“drive” and “facilitate” definitions. Additionally, Applicant seems to admit that other options are available to meet the need if the LPP is not approved and constructed.*

**UDWRe Response:**

**The study report has been revised to delete the term facilitate. The project is designed to meet reasonably anticipated demand. Refer to the response to USFWS Comment 1 in the General Comments section.**

**Lisa Rutherford and Paul Van Dam Comment 79:**

*(Page ES-2) Overall, the LPP Project displays greater benefits than costs given the complex set of economic variables and assumptions under consideration. Depending on economic perspectives and assumptions, the LPP Project direct net benefits range from about \$1.8 to \$2.7 billion, and the LPP Project costs range from about \$1.8 to \$2.7 billion (2010\$, present value). The cost and benefit ranges are exactly the same?*

**COMMENT**

*The “?” at the end of the paragraph above needs explanation. Why would the Applicant leave a “?” at the end of the paragraph? If intentional, it appears the author is questioning his/her own calculation. If by accident, it seems to imply that whoever wrote this study wanted to “verify” the figures and never returned to do so. Since the cost of the proposed pipeline is the crux of the matter for WC citizens who will be expected to pay for this project and yet a firm cost has not been provided after 10 years of study and \$28 million spent, Applicant should explain why this question mark remains.*

**UDWRe Response:**

**Note that this appears to be an editing error, corrected in the updated study report.**

**Lisa Rutherford and Paul Van Dam Comment 80:**

*(ES-2) The analyses have incorporated a LPP Project configuration that includes a pump storage hydro generation component. This LPP Project configuration has LPP Project costs of about \$2.6 to 3.2 billion, with benefits potentially in the \$2.9 to \$4.3 billion range. These estimates are preliminary in nature. The B/C ratio is about 1.14 to 1.34 depending on analysis assumptions.*

*An initial set of analyses have taken into account relying on the natural gas generation alternative for pipeline water pumping (see Tables 5-3 and 5-4). The pumped storage LPP Project with natural gas generation pumping would have benefits of about \$2.9 billion, with cost at about \$2.6 billion (4.14% discount rate); or benefits at about \$4.3 billion, with costs at about \$3.2 billion (3.0% discount rate). This yields B/C ratios of 1.12 and 1.33, respectively.*

*The Commission’s project developmental perspective differs from the NED perspective, and it also focuses exclusively on the power production costs and benefits (hydro project) portions of the LPP Project, per a specified hydro project configuration. Under this specified configuration, the hydro project power benefits are substantially less than the hydro project costs.*

**UDWRe Response:**

**FERC has changed its preferred methodology to a true marginal cost perspective that is described in detail in Chapter 6 of the revised study report.**

**Lisa Rutherford and Paul Van Dam Comment 81:**

**COMMENT**

*Given the challenges that cost/benefit (B/C) analyses face with regard to identifying “benefits” which may not actually accrue and the possibility of “double dipping” on benefits, FERC should rely on the Commission’s project developmental perspective when evaluating the B/C of the LPP project.*

*Additionally, the following information from Applicant to FERC creates confusion and needs further explanation by Applicant since none of the tables appear to provide this information From December 9, 2015 letter from State of Utah DWRe to FERC:*

*Depending on variable economic perspectives and assumptions, the **LPP Project with peaking power direct net benefits range from about \$1.8 to 2.7 billion**, and the **LPP Project with peaking power costs range from about \$1.5 to \$1.8 billion** (2010\$, present value, rounded) (see Tables 5-172A and 5-172B). Overall, the LPP Project with peaking power is displaying greater benefits than costs given the complex set of economic variables under consideration.*

**UDWRe Response:**

**The NED economic analyses are updated in the revised study report.**

**Chapter 1 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 1.5.2)*

*The Kaibab Tribe previously commented that the UBWR must design, construct, and operate the pipeline in accordance with tribal regulations, as applicable, in addition to federal and state regulations, 2012 Comments at 8, but the UBWR does not mention this requirement in its latest draft study report. See Revised Draft Study Report 10 at 1-15. The final study report on socioeconomics and water resource economics must acknowledge the obligation to comply with all applicable tribal regulations.*

**UDWRe Response:**

**The study report notes that the state would work with the Kaibab Tribe in formal inter-governmental agreements, and expects to comply fully with Federal policies and regulations.**

**Kaibab Tribe Comment 2:**

*(Section 1.5.1)*

*The Kaibab Tribe previously commented that the UBWR must include all of the objectives identified in Study Plan 10, 2012 Comments at 8; 2011 Comments at 29, but the UBWR still has not done so in its latest draft report. See Revised Draft Study Report 10 at 1-23 to -24.*

*The final study report on socioeconomics and water resource economics must identify all of the objectives listed in Study Plan 10.*

**UDWRe Response:**

**The revised study report has attempted to comply with Study Plan objectives. The study report acknowledges that Tribal concerns and economic opportunities should be formalized through state-Tribal inter-governmental agreements.**

**Chapter 4 Comments:**

**Lisa Rutherford and Paul Van Dam Comment 82:**

**Chapter 4 Water Resource Marginal Costs and Alternative Project Costs**

**4.2 Water Resources Marginal Costs (Page 4-5)**

*Based on current MWH review and engineering cost estimates (in-progress), new water treatment facility costs are projected to be in the \$750-\$1,150/acre-foot range depending on an ability to meet regulatory and environmental compliance requirements (2010\$ annualized present value costs). Some estimates suggest higher costs for the reverse osmosis and brine disposal configurations, likely to be more than \$1,150/acre-foot to develop and operate, and taking into account real escalation costs for annual plant operations. Current evaluations suggest that the most likely plant configuration for the LPP Project area would be in the higher cost range.*

**COMMENT**

*Reference comments on Page 30 of this document regarding the Jordan Valley Water Conservancy District “2014 Conservation Plan” and the costs for projects versus conservation for their area and district. \$11,400 per AF is their average capital cost for water supply projects while conserving water and deferring future water supply projects could save in excess of \$1 billion.*

**UDWRe Response:**

**The current expectations are that all programmatic conservation measures will be adopted prior to the LPP Project, and the annualized costs of such are approximately \$350/acre-ft.**

**Lisa Rutherford and Paul Van Dam Comment 83:**

*(Page 4-5) The LPP Project is reviewed in this analysis with the expectation that lower cost resources are brought into development first (such as conservation and water right transfers, and other planned water development projects), and with the LPP Project development following thereafter. The LPP Project is assumed to avoid, or delay, the construction of high-cost water treatment and waste byproduct disposal facilities, such as reverse osmosis (RO) and brine evaporation projects—the most likely plant and operations configuration.*

**COMMENT**

*If lower cost resources are brought into development first (conservation, rights transfers, non-LPP development projects) the flow of water through the pipeline that is anticipated to create energy and pumped storage “energy” benefits will be minimal for a considerable period of time. Applicant should explain how the benefits of pumped storage which are being used to “sell” the project will be affected and computed to incorporate this situation.*

## UDWRe Response:

The pumped storage components are not a sales feature. They are a potential component that, depending on economic conditions in the power markets when the decision is made to pursue this component, may be beneficial by allowing power to be generated for sale at prices that would not otherwise be available by run of the pipeline power or peaking power operations.

The revised study report acknowledges that the pumped storage project has power benefits that would occur from the beginning of the operations phase utilizing the forebay reservoir, as is currently being planned by UDWRe and the Districts, to generate the full 300 MW of pumped storage power for 10 hours per day. Nevertheless, the pumped storage capital costs are high, and power benefits are discounted over a 50-year time horizon. This is why the B/C ratios for the pumped storage configuration are lower than the in-line hydropower system attached to the LPP Project.

## Chapter 5 Comments:

### Lisa Rutherford and Paul Van Dam Comment 84:

#### Chapter 5 Water Resource Economic Benefits and Costs NED Analyses

*(Page 5-1) The benefit and cost values are displayed in the tables below and compose the following items: Benefits:*

*The alternative costs (value) of the next available water supply resource.*

- *The power benefits from either in-line, peaking, or pump storage generators. Costs:*
- *Construction costs including pipelines, power (or natural gas) generators/pumps, power transmission facilities, and all other construction costs.*
- *Operation, maintenance, and replacement costs over time (OM&R).*
- *Power for primary reservoir and inline water system pumping.*
- *Foregone power from the primary reservoir, reflecting reduced power from water diverted by the LPP Project.*

#### **COMMENT**

*Applicant is using RO as the cost (value) of the next available water supply resource. FERC should challenge this as being unreasonable. Although RO would be required for treatment of some water sources (Pah Tempe, for example), it would not be required for all. Applicant should be required to do additional study prior to license approval.*

## UDWRe Response:

The revised study report does not use the RO costs in the FERC economic analysis, as the analysis is limited to only regional power costs for combined cycle combustion turbines, which represent avoided costs. The comment inaccurately characterizes RO treatment of LaVerkin Springs water as the only advanced treatment required under the No Lake Powell Water Alternative. Virgin River flows diverted at Washington Fields Diversion would need to be stored in a reservoir and treated with RO processes to produce a

consistent supply of potable water to meet demands for indoor use resulting from the growing population.

**Lisa Rutherford and Paul Van Dam Comment 85:**

*(Page 5-1) The pump storage configuration would have more (higher) capital costs incorporated in the near-term years of life-cycle cost analysis.*

*(Page 5-1) As a general statement, the higher the initial capital costs for any project, the greater is the risk of the economic analyses being inaccurate, thus carrying over the life of the project inadequate assumptions.*

**COMMENT**

*As tax payers faced with repaying this exorbitantly expensive project – no matter how Applicant runs the numbers – the pump storage configuration’s higher capital costs that create greater risk of poorly done economic analyses are of great concern. Since, according to the PLP, the pump storage component is integral to the LPP, FERC should ensure that the energy aspects of this component and the costs are reviewed with particular care.*

*As noted in earlier PLP comments regarding “pumped storage,” the costs associated with this part of the LPP are not being discussed opening in state meetings, legislative meetings, county meetings or city meetings. The WCWCD’s “2013 Facts” sheet listed the county’s repay portion of the LPP at \$912,500,000. The latest “Facts” on the WCWCD website still lists the LPP at \$1, with footnote showing that comes from the Applicant’s website. With WC getting the lion’s share of the 86,000 acre feet of LPP water, and the costs shown in Draft Study Report 10, it’s difficult to see how they can assert \$912,500,000 under any of the scenarios. Although they may argue they are adjusting costs to include “benefits,” as already noted, benefits are not as quantifiable as cost. Citizens care about cost to them.*

**UDWRe Response:**

**The revised study report acknowledges that a pumped storage project has power benefits that would occur from the beginning of the operations phase utilizing the forebay reservoir, as is currently being reviewed by UDWRe and the Districts. Nevertheless, the pumped storage capital costs are high, and power benefits are discounted over a 50-year time horizon. This is why the B/C ratios for the pumped storage configuration are lower than the baseline hydropower system attached to the LPP Project.**

**The revised Report does not use the RO costs in the FERC economic analysis, as the analysis is limited to only regional power costs which are avoided costs.**

**Lisa Rutherford and Paul Van Dam Comment 86:**

*(Page 5-1) Related to the above analyses, the project OM&R costs are likely the most uncertain factor related to construction costs. Low range values are used here relative to a broad range of construction projects.*

**COMMENT**

*Again, as tax payers, proper evaluation of LPP costs is critical. If what Applicant is saying*



with regard to “Low range values” is that they have factored in low O&M costs, FERC should require that Applicant factor in “highest” potential costs not lowest.

**UDWRe Response:**

**Refer to the response to the previous comment. The FERC analysis in Chapter 6 of the study report is restricted to regional power costs only for the designated hydro system project.**

**Lisa Rutherford and Paul Van Dam Comment 87:**

*(Pages 5-2 to 5-5 and 6-1-6-5) Tables 5-1 to 5-4 and Tables 6-1 to 6-4 provide economic evaluations of various LPP options. Tables 5-1 to 5-4 have the following:*

NOTE:	
Estimated Cost Per Delivered M&I Water in \$/acre-foot.: Expressed in Constant Annualized \$/acre-foot*	NA
Expressed in \$/1,000 gal.:	
* For Average Annual acre-foot Delivery 2021-2060:	NA 65,898

**COMMENT**

*Applicant should explain why the estimated cost per delivered M&I Water in \$/acre-foot and that cost expressed in \$/1,000 gal are not provided. Also, Applicant should explain how the 65,898 average annual acre-foot delivery from 2021-2060 was determined/calculated. There is an additional note that states “NOTE: NA, not applicable to the pump storage configuration” but since Tables 5-1 to 5-4 all deal with M&I water, further explanation is needed to explain why the information is not applicable.*

*Applicant should also explain why 2012’s Draft Study Report 10 had six more economic analyses tables as shown below than the 2015 Draft Study Report 10 currently under review:*

*LPP NED Analyses – Baseline NED Assumptions and Escalation Rates*

*(Table 5-1 2012) LPP NED Analyses – Social Time Preference Discount Rate (Table 5-2 2012)*

*LPP NED Analyses – Natural Gas Pumping Baseline NED Assumptions and Escalation Rates*

*(Table 5-5 2012) LPP NED Analyses – Natural Gas Pumping Social Time Preference Discount Rate (Table 5-6 2012)*

*Commission Economic-Financial Analyses with 5.4% Nominal Discount Rate*

*(Table 6-1 2012) Commission Economic-Financial Analyses with 3% State Real Discount Rate (Table 6-2 2012)*

**UDWRe Response:**

**The project is intended to meet reasonably anticipated demand.**

**The LPP Project (baseline project) costs will not be melded with the hydropower system costs (with the pumped storage facility). If the pumped storage configuration is pursued by the District, it will have to absorb its own costs.**



The revised study report has reduced the tables that appear in the NED economics section, and Chapter 6 has provided more explanation and detailed cost components for the FERC analysis. Appendix A also provides detailed timeline schematics that illustrate the phasing of benefits and costs.

## **Chapter 6 Comments:**

### **LPP Coalition Comment 1:**

*(Section 6.2, Page 6-1)*

#### **Hydro Project benefits**

*“The hydro project costs include all capital construction for power generation and transmission and penstock (pipeline) construction, and associated O&MR costs. They do not include water pumping or Water Conveyance System pipeline and pump station construction costs to the hydro project portion of the larger LPP Project. The pump storage configuration of the LPP Project would have B/C ratios of about 0.47 to 0.89, and the power costs are estimated to be about \$80-130/MWh. This cost per MWh is higher than the avoided cost of about \$65/MWh (or \$85/MWh for the green power premium).”<sup>21</sup>*

*Commission Staff should direct UBWR to supplement Study Report No.10 to explain what the ratios quoted above mean, and what assumptions are built into them. Also, UBWR should be required to address the discrepancies in different power costs listed throughout the Study Report.*

<sup>21</sup> Study Report Section 6.2, Hydro Project Benefits, p. 6-1, (emphasis added)

### **UDWR Response:**

The hydropower system costs have been substantially revised and more fully explained in Chapter 6 of the revised study report.

### **LPP Coalition Comment 2:**

*(Section 6.2, Page 6-1)*

#### **Hydro Project benefits**

*The Study Report does not include an analysis disclosing how the public can possibly afford this billion dollar water project. In FERC comments on the 2011 Study Report (“Figure 1. FERC Questions and UDWR Responses” chart above), Commission Staff commented that the report lacks project financing and cost allocations to districts and lacks user costs. The reports needs current user costs and evaluation of increased user costs associated with project financing.<sup>22</sup> However, UBWR fails to include this type of analysis in the Study Report. Further, 21 Utah University economists signed a letter to Utah’s Governor and completed a report. Based on their analysis they concluded that the Project proposal will cause debt and increased fees. They said; “If there is only a need for a small portion of water over coming 20-40 years and there are a variety of alternative water sources; the economists questioned why the project is being proposed now.”<sup>23</sup>*

<sup>22</sup> See Draft Study Report 10: Socioeconomics and Water Resource Economics, Attachment B. Lake Powell Pipeline Project, eLibrary 20110728-4143, ILP UBWR Responses to Draft Study Reports comments. FERC comment 29, p.90, (July 28, 2011) (emphasis added)

<sup>23</sup> Letter to the Governor, University of Utah, available at <http://citizensfordixie.org/wp-content/uploads/2011/11/Economist-Letter-to-Governor-2015.pdf>  
Report <http://citizensfordixie.org/wp-content/uploads/2011/11/Economists-report-pipeline-2015.pdf> (Oct 26, 2015)

**UDWRe Response:**

**Refer to the responses to Gail Blattenberger's Comments in the General Comments section.**

**The study report focuses on economic project cost alternatives and demand-supply needs per the population and economics growth forecast provided by the Utah Governor's Office of Management and Budget. The study report is an economics impacts, not financial, analysis.**

**The Districts' pricing and fiscal information for water delivery is not a part of the study report, but this information is being developed by WCWCD and UDWRe.**

**LPP Coalition Comment 3:**  
(Section 6.2, Page 6-1)

**Hydro Project benefits**

*More importantly, since UBWR does not have the funds to build the pump storage project and has no intention of building it anytime soon, there should be a separate analysis of the LPP Project without the pump storage project. Using the pump storage to increase the benefits analysis skews the results in the Study Report. Additionally, the Commission Staff commented in 2011 ("See Figure 1. FERC Questions and UDWR Responses" above) that Chapter 5 should be corrected in the final report to include pumped storage development in analysis of the Project and analysis of pumped storage effects on the proposed project's economic benefits presented separately, which did not occur.<sup>24</sup> Also, missing completely in this Study Report is any comparable economic analysis of the alternatives. The Commission must assure accurate information for decision makers to understand the choices.*

<sup>24</sup> Draft Study Report 10: Socioeconomics and Water Resource Economics, Attachment B. Lake Powell Pipeline Project, eLibrary 20110728-4143, ILP UBWR Responses to Draft Study Reports comments FERC comment 21, p.89, (July 28, 2011) (emphasis added)

**UDWRe Response:**

**The study report contains analysis of the Project water supply alternatives.**

**The study report focuses on economic project cost alternatives and demand-supply needs per the population/economics growth forecast provided by the Utah Governor's Office of Management and Budget. The study report is an economics impacts, not financial, analysis.**

**The Districts' pricing and fiscal information for water delivery is not a part of the study report, but this information is being developed by the Districts and UDWR.**

## **Chapter 7 Comments:**

### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 10 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on socioeconomics and water resource economics must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

### **UDWR Response:**

**As noted in the revised study report, the additional hydro system/hydropower analyses developed for the LPP Project have been included. Also, these analysis and interface with the economic analysis have been discussed with USBR staff at the Denver Technical Center.**

## **Chapter 8 Comments:**

### **Lisa Rutherford and Paul Van Dam Comment 87:**

#### **Chapter 8 Socioeconomics Baseline (Action and No Action Alternatives)**

#### **8.3 Economic Trends**

#### **8.3.1 Personal Income Trends**

*(Page 8-7) Personal income is generally seen as a key indicator of a region's economic vitality and the economic well-being of its residents. Total personal income can come from two sources: (1) labor or earned income, consisting of wages and salaries, other labor income and proprietors' income; and (2) non-labor income, which includes transfer payments (e.g., Social Security, Medicare, food stamps, unemployment insurance) and investment (or interest) income (consisting of dividends, interest, and rent).*

#### **COMMENT**

*"Benefits" are a big part of the economic analyses being provided to FERC by Applicant. Even with Washington County being one of the fastest growing counties in the state, its economic performance has trailed that of other counties. From the Utah Department of Workforce Services "2014 County Rankings" report, although WC ranked second in 2014 for change in Nonfarm Jobs, we were middle of the pack at 4.3% unemployment rate (best 3.2%), eighteenth out of twenty-nine counties for 2014 Median Household Income, twenty-fifth for 2014 Per Capita Income, and twenty-first for 2014 Average Monthly Nonfarm Wage. Growth does not necessarily equate to better incomes or better jobs – as has been shown by WC's performance against other Utah counties. Some may use this a reason to build the LPP – good jobs and other "benefits" – but those jobs will not last forever while our county's reputation for jobs and income might and other benefits may not be realized.*

### **UDWR Response:**

**Chapter 8 of the study report discusses local socioeconomic factors and is intended to be informational, not to promote the Project as a “make work” endeavor. The Project will facilitate growth as will any other water supply project.**

### **Chapter 9 Comments:**

#### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 10 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on socioeconomics and water resource economics must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the Kaibab Tribe previously commented that the UBWR failed to analyze socioeconomic impacts on the Kaibab Indian Reservation, did not indicate whether it had consulted with the Kaibab Tribe to establish a baseline, and cannot simply assume compliance with Executive Order 12898 regarding environmental justice. 2012 Comments at 8; 2011 Comments at 29-30. The UBWR continues to ignore its obligation to analyze economic impacts on the Kaibab Indian Reservation, however, stating that "[a]dditional analyses are forthcoming." Revised Draft Study Report 10 at 9-2. The UBWR also does not describe its efforts to consult with the Kaibab Tribe on this matter. Id. at 9-1 to -2. Thus, Revised Draft Study Report 10 is incomplete, and the final study report on socioeconomics and water resource economics must fully analyze economic impacts on the Kaibab Indian Reservation.*

#### **UDWRe Response:**

**In Final Study Report 10 - Socioeconomics and Water Resource Economics, it is noted that LPP Project impacts and economics opportunities for the Kaibab Tribe would likely be identified under an inter-governmental agreement between UDWRe and the Kaibab Tribe. UDWRe proposes to send a letter to the Kaibab Tribe explaining that Final Study Report 10 – Socioeconomics and Water Resource Economics is not the best instrument to adequately review, in full, the range of Kaibab Tribe socioeconomic impacts, including specific economic opportunities for the Kaibab Tribe. This effort requires a separate, more specific review, where direct discussions would occur at the technical level. The more-detailed review would serve as the basis for the inter-governmental agreement, also identifying realistic economic benefits for the Kaibab Tribe, relative to the LPP Project construction and future operation.**

### **Chapter 10 Comments:**

#### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 10 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on socioeconomics and water resource economics must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the Kaibab Tribe previously commented that the UBWR cannot simply state that additional analyses on qualitative economic impacts "are forthcoming." 2012 Comments at 8-9; 2011 Comments at 30. In place of actual analyses subject to meaningful review and comments from the public, the UBWR continues to simply promise additional analyses in the future. See Revised Draft Study Report 10 at 10-1. This approach defeats the purpose of circulating a draft study report. The UBWR must make its analyses on qualitative economic impacts available to the public and fully consider the comments it receives prior to submitting its final study report on socioeconomics and water resource economics.*

**UDWRe Response:**

**In Final Study Report 10 - Socioeconomics and Water Resource Economics, it is noted that LPP Project impacts and economics opportunities for the Kaibab Tribe would likely be identified under an inter-governmental agreement between UDWRe and the Kaibab Tribe. UDWRe proposes to send a letter to the Kaibab Tribe explaining that Final Study Report 10 – Socioeconomics and Water Resource Economics is not the best instrument to adequately review, in full, the range of Kaibab Tribe socioeconomic impacts, including specific economic opportunities for the Kaibab Tribe. This effort requires a separate, more specific review, where direct discussions would occur at the technical level. The more-detailed review would serve as the basis for the inter-governmental agreement, also identifying realistic economic benefits for the Kaibab Tribe, relative to the LPP Project construction and future operation.**

**Gregg Ferris Comment 1:**

*Section 10.4.3 on page 100 of the 2008 Study Plan indicates the need for "... adequately addressing state/local community alternatives for meeting new water resource supplies."*

*Figure 4-1 in Section 4.1.2 of DSR 10 presents the Study's Demand Curve for water use through 2060. This Demand schedule was sourced to the Utah Department of Water Resources (UDWRe) and forms the basis for the water need expected to serve Washington County's population through 2060. However, the Utah Legislative Auditor General's Report of May 2015 finds on page 6 "The Division Does Not Have Reliable Local Water Use Data" and "We Question the Reliability of the Division's Baseline Water Study". Page 1 of the Utah Department of Natural Resource's response to the Auditor General's Report indicates complete agreement with the Auditor General's findings. If there is general agreement that UDWRe's local water data is unreliable and its baseline is questionable, how can it reasonably be held to an "adequately" criterion?*

*In Chapter 5 of DSR 10 on page 5-1 above Table 5-1 the report states, "... the project OM&R costs are likely the most uncertain factor related to construction costs. Low range values are used here relative to a broad range of construction projects." Since the report clearly states the OM&R costs are the "most uncertain" then using "low range values" biases the representation of uncertainty downward. Given the total expected cost of the LPP, uncertain OM&R costs should not be held to a low standard. To adequately present the report's stated level of uncertainty, this cost component should be estimated using average cost values, and even more appropriately, high cost values should be used to properly reflect the stated level of uncertainty DSR 10 explicitly associates with these costs.*

**UDWRe Response:**

**The demand and supply curve in the Water Needs Assessment has been revised as a result of receiving additional information from the District and other applicable sources. It reflects the best available information.**

**The OM&R costs in the revised study report have been updated and based on additional information. The costs have been increased, as described in the study report. The present value OM&R costs are currently estimated to be about 8% of the present value construction costs, and 12% of the separate hydropower project system costs, for FERC analyses.**

**Gregg Ferris Comment 2:**

*Section 10.2.1 of the 2008 Study Plan sets a goal to, “Ensure that NED analyses for water and power impacts are appropriately applied and integrated.”*

*Section 6.2 of DSR 10 indicates the Benefit/Cost ratio for the Hydro project ranges from 0.47 to 0.89 and these values “... do not include water pumping or Water Conveyance System pipeline and pump storage construction costs to the Hydro project portion of the larger LPP Project.” Would standard National Economic Development (NED) techniques appropriately exclude these costs? Does the Hydro project produce power without a water supply? The LPP cannot operate without the power required to move water out of Lake Powell, into the pipeline and up and over the elevations the water has to be conveyed. Are these costs included in the B/C analysis of the project as a whole or just completely left out of the analysis? Either way, would appropriate NED assessments authorize a project whose B/C ratio is less than 1? If the Hydro project is disallowed or factored into the overall LPP B/C estimation, how does that change the broader B/C analysis where power would have to be bought on the open market?*

**UDWRe Response:**

**The NED LPP Project analyses include the baseline (and pumped storage) hydropower system costs, but the FERC analyses do not include LPP Project costs that would be built with or without the power systems. The revised study report provides a better picture of those separate costs, given updated assumptions. As noted in Chapter 6 of the study report, the power cost (value) picture has changed.**

**Gregg Ferris Comment 3:**

*Page 106 in Section 10.2.1 of the 2008 Study Plan indicates the Study will, “Determine Project (and alternatives) marginal costs”. 20160216-5000 FERC PDF (Unofficial) 2/12/2016 5:07:05 PM*

*Section 6.3 of DSR 10 provides a marginal cost analysis indicating “... the costs of the water delivery system are not included as part of the Hydro project per se.” Using this approach the study produces B/C ratios of 0.97 to 1.10 seemingly yielding a justification for the project under the most favorable end of the assumptions. What is the justification for this approach? Does the Hydro project yield any benefits at all if water cannot be*



*delivered to it and conveyed from it? This analysis seems like a dedicated effort to find a set of marginal circumstances under which the project can find justification.*

**UDWRe Response:**

**The NED LPP Project analyses include the baseline (and pumped storage) hydropower system costs, but the FERC analyses do not include LPP Project costs that would be built with or without the power systems. The revised study report provides a better picture of those separate costs, given updated assumptions. As noted in Chapter 6 of the study report, the power cost (value) picture has changed.**

**The hydropower system analyses in Chapter 6 of the study report conclude that the power project configuration (baseline and with pumped storage) costs will likely be greater than regional power market costs, given current circumstances. But the power project costs are competitive when compared to CCCT gas turbines, or wind and PV solar machines. All new renewable resource costs are expensive when compared to current power system and market-based prices.**

**Gregg Ferris Comment 4:**

*Section 10.2.1 of the 2008 Study Plan sets a goal to, “Ensure that RED analyses for water and power impacts are appropriately applied and integrated.”*

*Section 7.1 of DSR 10 indicates the Regional Economic Development perspective (RED) “... represents how the state’s investment in any project affects the local economy.” Section 7.2 presents as impacts, estimates of total added construction labor income and annual O&M labor income. However the section is silent on the negative income impacts to Washington County taxpayers resulting from the debt payments the project would require. This debt analysis is presented in a letter to Utah’s Governor Herbert and the heads of both Utah Houses signed by 21 economics professors from Utah’s three major universities. The letter states the “LPP debt service is equivalent to \$369-\$781 every year for 50 years for every man, woman and child currently living in Washington County.” This cost to Washington County households is substantial as the economist’s letter indicates that even under the low cost LPP alternative the WCWCD would be required to repay the debt through a scenario like:*

- *Raising impact fees 123 percent to an average of \$13,630 per connection, together with*
- *Raising water rates 576 percent, together with selling 1,200 acres of land owned by the District, together with*
- *Continuing to collect property taxes near the maximum levy rate allowed by state law*

**UDWRe Response:**

**Refer to the responses to Gail Blattenberger’s Comments in the General Comments section.**

**The existing and revised study report RED analysis deals only with Project construction impacts, following federal/state agency guidelines. The financial impact to the Districts’**



**areas are being reviewed by the Districts. The Districts' pricing and fiscal information for water delivery is being developed by the Districts and UDWRe.**

**Gregg Ferris Comment 5:**

*Page 104 in Section 10.6.1.3 of the 2008 Study Plan states, "A significant impact would be an increase to the capital/operation costs of new water resources delivery greater than 10 percent of the existing water supply delivery costs, to existing residents and municipal users ..."*

*Based on the Study Plan stated 10 percent change criterion, water rate increases of "576 percent" (as referenced in the 21 Economists research in 4 above) resulting from the water delivered by the LPP project must be considered extremely significant and doubly so since this change is only a portion of the requirements identified for delivering the water via the LPP. Such an impact would require that a course of remediation be addressed in the licensing decision, otherwise the final report must be judged as incomplete. If no feasible remediation below the 10 percent criterion can be designed, the LPP project must be disallowed.*

*Further, the "21 Economists" letter states their analysis shows the water rate increases "would significantly decrease Washington County resident's demand for water – in our analysis, demand decreased so much the LPP water would go unused." Effectively, building the LPP would result in significant and ongoing costs to the community that yield no output. This relationship between water rate increases and demand decreases should be a fundamental part of the licensing decision because it is bedrock economics and yet there is no analysis of this relationship in the report. In fact the damping effects of water rate increases has been shown to have "real life" application in communities like Irvine California, Tucson, AZ and Albuquerque, NM where water rate increases have resulted in significant water use decreases. Unless this issue is fully addressed, the final report must be considered inadequate.*

**UDWRe Response:**

**Refer to the responses to Gail Blattenberger's comments in the General Comments section.**

**The demand and supply curve referred to in the Water Needs Assessment does take into account some price-induced, programmatic conservation measures, not including water use curtailment actions. This price response reduction is based on state-wide expectations used by UDWRe.**

**As noted in the revised study report, all new water supply alternatives will increase water costs. The Districts' pricing and fiscal information for water delivery is being developed by the Districts and UDWRe.**

**If the Districts' pricing information, taking into account additional population growth, suggests substantial retail rate increases, UDWRe will revisit the demand response before proceeding with continued review and securing state financing.**

**Gregg Ferris Comment 6:**

*Page 95 in Section 10.2.1 of the 2008 Study Plan indicates the need to, “Identify specific potential population and economic growth impacts, with/without the Project, including baseline growth projections.”*

*Table A-1 in DSR 10’s Appendix A on page 114 presents projections for “Household Number” and “Household Size” for future years. This data does not align with data in earlier sections of DSR 10. The Table’s 2060 entry for Washington County indicates an estimate of 309,273 Households and an average Household Size of 2.78. Multiplying these 2 numbers together yields a population estimate of 859,779. This number is wildly different from the population projection of 581,731 presented in Table 8-2 on page 8-6 of DSR 10. How do these population data reconcile in producing “baseline growth projections.”*

**UDWRe Response:**

**The revised study report should correct any inconsistencies.**

**Gregg Ferris Comment 7:**

*Section 10.2.1 of the 2008 Study Plan sets as study Goals and Objectives for Population, Regional Economics and Fiscal Impacts to “Clarify the regional economic impacts associated with Project construction and development: identify services impacts.”.*

*In this context, DSR 22 is at least inconsistent and likely erroneous in Section 1.2.1. In Section 1.2.1 the report indicates, “The baseline per capita use leading to the conservation achievements was 302.3 gallons per day for 2005 throughout all of Washington County.” However in Table 1-1 which presents DSR 22’s estimated “Demand with Conservation”, the 2010 WCWCD Demand with Conservation is indicated as 50,380 acre-feet. Converting the 50,380 acre-feet to Gallons per Capita per Day (GPCD) yields about 325 GPCD ( $50,380 \text{ acre-feet} * [325,851 \text{ Gallons per acre-foot}] / [\text{Table 1-1 2010 population estimate of } 138,115] / 365 \text{ days}$ ), 22.7 GPCD more than the reported 2005 value. The result indicates conservation had a negative effect on water use! This is a clear contradiction in terms and requires revision of DSR 22’s water demand across time before any licensing decision can be finalized as impact clarity cannot be achieved with inconsistent or erroneous GPCD data.*

**UDWRe Response:**

**Final Study Report 19 - Water Needs Assessment and the socioeconomics study report have been revised.**

**Gregg Ferris Comment 8:**

*Section 10.4.3 of the 2008 Study Plan indicates,*

*“The data required to complete the water resources economics and the socioeconomics analyses can be readily acquired from ... West-wide data on water development costs and supply curves.”*

*The DSR 22 Section 1.2.1 indication of 302.3 GPCD water use in the WCWCD understates the potential water saved through conservation initiatives as demonstrated in the research of Utah's Office of the Legislative Auditor General in "A Performance Audit of Projections of Utah's Water Needs (Report #2015-01)" which states on page 41 "The Southern Nevada Water Authority, which serves the Las Vegas region, has a goal to reduce water use to 199 (GPCD) by 2035. In contrast, the Communities of Southwestern Utah, have a climate similar to that of southern Nevada, and have a goal to reduce water use to 292 GPCD by 2060." If the WCWCD region were to achieve the same goal as southern Nevada, the acre-feet needed in 2035 would reduce to 72,702 (199 GPCD \* [2035 Washington County population of 326,151 presented in Table 4-1 in DSR 10] \* [365 days] / [325,851 gallons per acre-foot]) nearly the total amount of supply expected from the LPP.*

*The DSR 22 Section 1.2.1 indication of GPCD water use in the WCWCD understates the potential water saved through conservation initiatives as demonstrated in the research of a letter to Utah's Governor Herbert and the heads of both Utah Houses signed by 21 economics professors from Utah's three major universities. This research indicates in Figure 1 that the GPCD amounts for Phoenix, the U.S. in total, and Los Angeles are already well below 199 GPCD.*

*The DSR 22 Section 1.2.1 indication of GPCD water use in the WCWCD understates the potential water saved through conservation initiatives as presented in the Western Resource Advocates publication "The Local Waters Alternative to the Lake Powell Pipeline". This research indicates the southwestern cities of Tucson and Albuquerque have already achieved GPCDs less than 175 in regions with climates similar to southwestern Utah.*

*The DSR 22 Section 1.2.1 indication of GPCD water use in the WCWCD understates the potential water saved through southwestern conservation initiatives as reported by Daniel Beard (former Commissioner of the Bureau of Reclamation) on page 28 of his book "Deadbeat Dams". In this publication Beard reports Los Angeles currently uses about 129 GPCD and that figure is down from 170 GPCD in 1980.*

*In the face of this "West-wide" evidence the FERC must reconsider the water use reductions accruing to the conservation estimates offered by the UDWRe for licensing the LPP. Indeed the opportunity for conservation seems especially pronounced in Washington County as represented in Figure 3.4 of the Legislative Auditor General's report which presents data indicating the Kanab/Virgin River Basin has the highest per capita water use in Utah. The FERC licensing process needs to build clarity into the "West-wide" water use experience in order to appropriately evaluate the need for the LPP.*

*Table 3-1 in DSR 22 indicates the 2060 Washington County water supply from sources other than the LPP will be 94,826 acre-feet per year ([Total Future M&I Supply of 211,995 ac-ft/yr] minus [LPP Supply of 82,249 ac-ft/yr] minus [LPP Water Reuse of 34,920 ac-ft/yr]). That water supply amount equates to 146 GPCD for the expected 2060 population of 581,731 (94,826 \* [321,825 gallons per acre-foot] divided by [581,731 people] divided by [365 days]). In 2013 Albuquerque used about 148 GPCD (John Fleck, ABQ Journal Online, October 23, 2013) while in 2014 Tucson used 127 GPCD ([tucsonaz.gov/water/about-us](http://tucsonaz.gov/water/about-us)). Clearly the UDWRe is not holding itself to a meaningful "West-wide" conservation standard. Applying the standards set by Tucson and*

*Albuquerque invalidates the need for the LPP in the time frame currently planned for construction.*

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Refer to the responses to Gail Blattenberger's comments and the end of the response to Andrew Kramer Comment 5.**

**Final Study Report 19 - Water Needs Assessment and the socioeconomics study report have been revised.**

**Gregg Ferris Comment 9:**

*Section 10.4.3 of the 2008 Study Plan indicates the need for "... adequately addressing state/local community alternatives for meeting new water resource supplies."*

*Table 3-1 in DSR 22 appears to fail to "adequately" assess the availability of non-LPP water in the WCWCD. Footnote "c" in the Table suggests that total wastewater reuse expansion may actually be 7,300 acre-feet not 3,400 acre-feet as reported in Table 3-1. Further, the credit rating firm Fitch reported in December 2015, the "Ash Creek pipeline project expected to generate an additional 6,000 af of water per year." Taken together these two alternative looks add 7,060 acre-feet to the base in Table 3-1. Adding in these alternatives bring the total local, non-LPP water supply to 101,886 acre-feet/year. This supply means if in 2060 Washington County residents used only 156 GPCD ([101,886 acrefeet/ year] times [325,851 gallons per acre-foot] divided by [Table 1-1's population estimate of 581,731] divided by [365 days]) there would be no need for the LPP. As noted above, Albuquerque and Tucson were using less than 156 GPCD prior to 2016. Further, Table 6-2 in the 2008 UDWRe Study Plan cites the WCWCD as indicating the "Ash Creek Pipeline Well Improvements" are expected to yield 13,670 ac-ft/yr, 10,830 ac-ft/yr more than indicated in Table 3-1 of DSR 22. Assuming the accuracy of the 2008 UDWRe citation, converting the latter incremental supply to its GPCD equivalent, and adding the result to the tallies above indicates Washington County's GPCD could rise to 192 GPCD, nearly equivalent to the SNWA 2035 goal for Las Vegas. Again, FERC should be evaluating the data presented by the UDWRe against the best practice goals and experience registered by comparable "West-wide" cities today.*

**UDWRe Response:**

**Final Study Report 19 – Water Needs Assessment provides the most current information on water supplies. Refer to the response to Andrew Kramer Comment 5 in the General Comments section.**

***Chapter 11 Comments:***  
**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 10 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on socioeconomics and water resource economics must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**As noted in the revised study report, the additional hydro system/hydropower analyses developed for the LPP Project have been included. These analyses take into account climate change impacts affecting USBR hydropower generation, with and without the LPP Project. Also, these analysis and interface with the economic analysis have been discussed with USBR staff at the Denver Technical Center.**

***Chapter 12 Comments:***  
**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 10 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on socioeconomics and water resource economics must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the UBWR briefly describes a couple unavoidable adverse impacts on socioeconomic resources, Revised Draft Study Report 10 at 12-1, but it does so without first developing and applying significance criteria. As with other resource topics, the final study report on socioeconomics and water resource economics must describe and apply significance criteria for the purpose of determining unavoidable adverse impacts.*

**UDWRe Response:**

**As noted in the revised study report, the additional hydro system/hydropower analyses developed for the LPP Project have been included. These analyses take into account climate change impacts affecting USBR hydropower generation, with and without the LPP Project. Also, these analysis and interface with the economic analysis have been discussed with USBR staff at the Denver Technical Center.**

**The comment on adverse impacts is unclear. UDWRe requests clarification of the comment from the Kaibab Tribe.**

## **Draft Study Report 11 – Special Status Aquatic Resources:**

### **General Comments:**

#### **Kaibab Tribe Comment 1:**

*As described below, Revised Draft Study Report 11 fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 30-32. In addition, the UBWR states that Revised Draft Study Report 11 "will be updated with pending information and modeling results" from Reclamation, and that "these modeling results will affect other resources included in the listed study reports," and it promises to file a final study report in April 2016 that addresses the comments received here as part of its license application, PLP at P 2, but this is insufficient. The Kaibab Tribe must have an opportunity to comment on the pending information and modeling results prior to their inclusion in a "final" report. As it stands, Revised Draft Study Report 11 is substantially incomplete and noncompliant with Study Plan 11, and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

#### **UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

### **Chapter 1 Comments:**

#### **Kaibab Tribe Comment 1:**

*(Section 1.5)*

*The Kaibab Tribe previously commented that the UBWR did not identify any issues or topics of specific tribal concern. 2011 Comments at 30-31. The UBWR has still not identified any issues or topics of specific concern to the Kaibab Tribe in its latest draft report, nor indicated whether it consulted with the Kaibab Tribe regarding this matter. See Revised Draft Study Report 11 at 1-23. The final study report on special status aquatic species and habitats must identify issues and topics of specific concern to the Kaibab Tribe.*

#### **UDWRe Response:**

### **Chapter 2 Comments:**

#### **Kaibab Tribe Comment 1:**

*(Section 2.1)*

*The Kaibab Tribe previously commented that the UBWR must consult with it regarding species of specific tribal concern, and must also describe its efforts to engage in tribal consultations on this matter. 2011 Comments at 31. The latest draft study report continues to simply state that "[n]o tribal aquatic species of cultural concern were identified." Revised Draft Study Report 11 at 2-1. This is inadequate, however. The final study report on special status aquatic species and habitats must contain a description of the UBWR's efforts to consult with the Kaibab Tribe on aquatic species of specific tribal concern.*



**UDWRe Response:**

**Kaibab Tribe Comment 2:**

*(Section 2.2)*

*The Kaibab Tribe previously commented that the UBWR must include any applicable tribal data in its analysis of special aquatic species and habitats, or at least describe its efforts to consult with the Kaibab Tribe and obtain tribal data. 2011 Comments at 31. The UBWR has not identified any tribal or described any attempt to obtain such data in its latest draft report. See Revised Draft Study Report 11 at 2-1. The final study report on special status aquatic species and habitats must include this information.*

**UDWRe Response:**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 11 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on special status aquatic species and habitats must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 5.1.1.1)*

*The Kaibab Tribe previously commented that the UBWR must describe the conservation and mitigation measures to be implemented to avoid and minimize impacts to all potentially impacted aquatic species, not just the Virgin River chub and woundfin. 2011 Comments at 31- 32. Now, however, the latest draft study report concludes that pipeline construction and operation would have no measurable effect on any aquatic species, so no conservation or mitigation measures were identified for any species. Revised Draft Study Report 11 at 5-1. This is inadequate. The final study report on special status aquatic species and habitats must explain why the UBWR changed its opinion regarding the potential impacts to the Virgin River chub and woundfin, and must describe conservation and mitigation measures for all impacted special status aquatic species.*

**UDWRe Response:**



## ***Chapter 6 Comments:***

### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 11 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on special status aquatic species and habitats must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

### **UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

### **Kaibab Tribe Comment 2:**

*(Section 6.2.1)*

*The UBWR states that the construction of Lake Powell Pipeline Project would not have any unavoidable adverse impacts to "federally listed aquatic species or their critical habitat," Revised Draft Study Report 11 at 6- 1, but it does not mention aquatic species of specific concern to the Kaibab Tribe. The final study report on special aquatic species and habitats must analyze the unavoidable adverse effects to aquatic species of concern to the Kaibab Tribe.*

### **UDWRe Response:**

## ***Chapter 7 Comments:***

### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 11 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on special status aquatic species and habitats must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

### **UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

## **Draft Study Report 12 – Special Status Plant Species:**

### **General Comments:**

#### **Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 12: Special Status Plant Species and Noxious Weeds Assessments (Nov. 30, 2015) ("Revised Draft Study Report 12") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 32-34. In addition, the UBWR states that Revised Draft Study Report 12 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBWR also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data, information and associated impact analyses performed will be updated in revised draft study reports and filed with the Commission as soon as they are completed." Id. The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study reports after they are revised further.*

*As it stands, Revised Draft Study Report 12 is largely incomplete because it does not include protection, mitigation, and enhancement measures and does not discuss either cumulative or unavoidable adverse impacts. Thus, the Commission should remand Revised Draft Study Report 12 to the UBWR for further revisions that are consistent with these comments and that fill in the substantial informational gaps.*

#### **UDWRe Response:**

**The study report on special status plant species and noxious weeds provides survey results and a preliminary evaluation of potential project impacts; information on mitigation, unavoidable adverse impacts, and cumulative impacts is provided in Chapter 5 of the PLP. The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the PLP and the revised Study Report 12.**

### **Chapter 3 Comments:**

#### **Kaibab Tribe Comment 1:**

*(Section 3.1)*

*The Kaibab Tribe previously commented that even though it provided the UBWR with a list of plants of cultural concern, the UBWR did not cite that list or indicate which plants are of cultural concern to the Kaibab Tribe in the prior draft study report. 2011 Comments at 32. The latest draft study report again states that it received a list of plants of cultural concern to the Kaibab Tribe, Revised Draft Study Report 12 at 3-1, but Table 3-1 does not cite that list as a source of information or indicate which plants are of cultural concern to the Kaibab Tribe. See id. at 3-2 to -14. The final study report on special status plant species and noxious weeds assessments must include the information contained in the Kaibab tribe's list of plants of cultural concern.*

#### **UDWRe Response:**

**The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the PLP and the revised Study Report 12.**

#### ***Chapter 4 Comments:***

##### **BLM Comment 1:**

*(Page 4-100)*

*Monitoring data on P.Sileri going back to 1987 indicates that the statement made about livestock grazing being a primary threat to the species is incorrect. There is a plot near the proposed pipeline that has two subplots, one that is open to grazing, and the other is fenced off to livestock grazing. The data shows that these two populations are almost identical. The biggest impact on this species according to data is rodents eating the roots and killing the plant. Most of the mortalities found in all of the plots monitored are due to rodents.*

##### **UDWRe Response:**

**Information from the long-term monitoring study has been incorporated into the discussion as requested.**

##### **Kaibab Tribe Comment 1:**

*(Section 4.1)*

*The Kaibab Tribe previously commented that the UBWR did not describe any efforts to consult with it regarding special status plant species that might be present within the pipeline survey area and did not cite any tribal information as a source. 2011 Comments at 33. Study Plan 12 requires the UBWR to consider impacts to tribal-designated plant species of concern, id., but the latest draft study report remains silent on its efforts to consult with the Kaibab Tribe regarding this issue. See Revised Draft Study Report 12 at 4-1 to -5. The final study report on special status plant species and noxious weeds assessments must describe the UBWR's efforts to consult with the Kaibab Tribe on plant species of tribal concern.*

##### **UDWRe Response:**

**The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the PLP and the revised Study Report 12.**

#### ***Chapter 6 Comments:***

##### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 12 will be updated with pending additional data and information concerning "impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on special status plant species and noxious weeds assessments must include the additional information concerning mitigation and adverse impacts, but only after the public has been given an opportunity to*

*review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The study report on special status plant species and noxious weeds provides survey results and a preliminary evaluation of potential project impacts; information on mitigation, unavoidable adverse impacts, and cumulative impacts is provided in Chapter 5 of the PLP.**

**Kaibab Tribe Comment 2:**

*(Section 6.14)*

*The Kaibab Tribe previously commented that, pursuant to Study Plan 12, the UBWR must include tribal-designated species of concern in its list of special status plants. 2011 Comments at 33. Although the Kaibab Tribe provided the UBWR with a list of plant species of concern, see Revised Draft Study Report 12 at 3-1, the latest draft study report remains silent on the species of concern to the Kaibab Tribe and does not acknowledge that species of tribal concern must be included in the list of special status species. See Revised Draft Study Report 12 at 6-4. The final study report on special status plant species and noxious weeds assessments must include this important information.*

*Further, as stated earlier, the UBWR must develop protection, mitigation, and enhancement measures to avoid and minimize impacts to special status plant species, including species of cultural concern to the Kaibab Tribe. The UBWR must also analyze the potential for cumulative impacts and unavoidable adverse impacts to the same plant species. Revised Draft Study Report 12 lacks this critical information and is thus incomplete. The final study report on special status plant species and noxious weeds assessments must include this information and analysis.*

**UDWRe Response:**

**The study report on special status plant species and noxious weeds provides survey results and a preliminary evaluation of potential project impacts; information on mitigation, unavoidable adverse impacts, and cumulative impacts is provided in Chapter 5 of the PLP. The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the PLP and the revised Study Report 12.**

**Chapter 7 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 7.1)*

*The Kaibab Tribe previously commented that the UBWR must account for tribal-designated species of concern, and that the failure to do so rendered the prior draft study report noncompliant with Study Plan 12. 2011 Comments at 33-34. The latest draft report also ignores the information provided to the UBWR by the Kaibab Tribe regarding plant species of cultural concern and fails to account for or identify those species in any way. See Revised Draft Study Report 12 at 7-1. This failure, together with the UBWR's failure to identify mitigation measures and analyze cumulative and unavoidable adverse impacts, leaves Revised Draft Study Report 12 incomplete in substantively significant ways. The final study report on special status plant species and noxious weeds assessments must correct these critically important omissions, but only after the public has been given an opportunity to*

*review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The study report on special status plant species and noxious weeds provides survey results and a preliminary evaluation of potential project impacts; information on mitigation, unavoidable adverse impacts, and cumulative impacts is provided in Chapter 5 of the PLP. The Plants of Cultural Concern that were identified during the surveys and assessments of potential impacts to Plants of Cultural Concern are now provided in Chapter 5 of the PLP and the revised Study Report 12.**

## **Draft Study Report 13 – Special Status Wildlife Species:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Swdy Report 13: Special Wildlife Species (Nov. 30, 2015) ("Revised Draft Study Report 13") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 34-36. In addition, the UBWR states that Revised Draft Study Report 13 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBWR also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data, information and associated impact analyses performed will be updated in revised draft study reports and filed with the Commission as soon as they are completed." Id. The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study reports after they are revised further. As it stands, Revised Draft Study Report 13 is largely incomplete because it does not include important information regarding protection, mitigation, and enhancement measures and either cumulative or unavoidable adverse impacts. Thus, the Commission should remand Revised Draft Study Report 13 to the UBWR for further revisions that are consistent with these comments and that fill in the substantial informational gaps.*

**UDWRe Response:**

**Final Study Report 13 – Special Status Wildlife Resources has been revised to include:**

**Chapter 5 - Mitigation and Monitoring. Mitigation “measures would be applicable to all LPP Project features and facilities during construction, operation and maintenance.” This would include alternatives that traverse the KPIR.**

**Chapter 6 - Unavoidable Adverse Effects and Impacts. “This chapter summarizes unavoidable adverse effects on threatened, endangered and candidate wildlife species and unavoidable adverse impacts on wildlife species of concern and tribal wildlife species of cultural concern” and**

**Chapter 7 - Cumulative Effects and Impacts. This chapter “analyzes cumulative effects and impacts that may occur from construction and operation of the proposed**

LPP Project when combined with the impacts of other past, present, and reasonably foreseeable future actions and projects after all proposed mitigation measures have been implemented”

Additional field studies and survey to determine species presence or absence or lands that remain un-surveyed for sensitive wildlife species would have to be performed during the year or season prior to the commencement of construction.

## **Chapter 2 Comments:**

### **Kaibab Tribe Comment 1:**

*(Section 2.2)*

*The Kaibab Tribe previously commented that the UBWR did not list any tribal data or describe its attempts to obtain such data. 2011 Comments at 34. The Kaibab Tribe also commented that the UBWR did not indicate whether it performed targeted field studies on the Kaibab Indian Reservation. Id. The latest draft report remains silent on whether the UBWR attempted to obtain any tribal data and performed targeted field studies on the Kaibab Indian Reservation. See Revised Draft Study Report 13 at 2-1. The final study report on special status wildlife species must correct this omission.*

### **UDWRe Response:**

**Chapter 2.2 Data Used of Final Study Report 13 – Special Status Wildlife Resources has been revised to read:**

“UDWRe consulted with the Kaibab Band of Paiute Indians and received a list of wildlife species of concern to the tribe. The Kaibab Tribe recognize the “Tribe’s Sovereign Right to govern its Wildlife Resource, and also recognizes the Spiritual, Cultural and Economic value of the Wildlife Resources its use by its members and all others, the Tribal Council, recognizes those resources are irreplaceable Tribal Assets and that unregulated use of the Wildlife Resources of the Tribe would threaten the Political Integrity, Economic Security, Spiritual, Cultural, Health and Welfare of the Tribe”. “The Tribe intends that Tribal Members and their spouses shall be afforded the greatest possible freedom to use and enjoy these resources consistent with the Preservations and improvement of these resources for future generations. To preserve the Indian respect for life in all forms and to perpetuate this attitude, both in Traditional Manner of hunting, fish and game and the approach to conservation of these most precious resources” (<http://www.kaibabpaiute-nsn.gov/Wildlife.html>). Permission was granted by the Kaibab Tribe to conduct multiple sensitive wildlife surveys and habitat assessment on the KPIR within proposed LPP Project alignments. Field surveys for KPIR sensitive species were conducted on over 2,000 acres of the KPIR. Results of the survey were presented to the Tribal Council on June 18, 2009.”

## **Chapter 3 Comments:**

### **USFWS Comment 1:**

*(Section 3.4, Pages 3-14 to 3-16)*

**Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern:**



*This table regularly refers to the Arizona Game and Fish Department but makes no mention of the Utah Division of Wildlife Resources. Many of the species in this section are Utah state sensitive species or are in the State's Comprehensive Wildlife Conservation Strategy, and we recommend the document include these designations.*

**UDWRe Response:**

**The footnote in Table 3.2 is revised to read:**

**1 USPC = Utah Division of Wildlife Resources Comprehensive Wildlife Conservation Strategy, Utah Species of Concern; CS = Species with Conservation Agreements; AFGD – WSC = Arizona Fish and Game Department Wildlife Species of Concern; BLM-S = BLM Sensitive Species; BCC = USFWS Birds of Conservation Concern; PIF = Partners in Flight Watch List; FWS = Fish and Wildlife Service; NPS = National Park Service.**

**Sources: Utah Conservation Data; Bureau of Land Management, Instruction Memorandum No.AZ-2011-005, issued December 22, 2010, Arizona Strip Field Office Proposed Plan/FEIS, 2007; USFWS Birds of Conservation Concern, 2002; Arizona Game and Fish Department Natural Heritage Program and Comprehensive Wildlife Conservation Strategy; Partners in Flight (PIF 2008); US Fish and Wildlife Service.**

**Kaibab Tribe Comment 1:**

*(Section 3.4)*

*The Kaibab Tribe previously commented that there were certain inconsistencies between Tables 3-2 and 3-3 regarding which species of concern have a potential Project nexus and which species do not have a Project nexus. 2011 Comments at 34-35. The UBWR did nothing to clarify the inconsistencies previously pointed out regarding the potential Project nexus of the Leconte's thrasher, Lewis's woodpecker, Northern goshawk, and blue grouse. See Revised Draft Study Report 13 at 3-14 to -20 (Tables 3-2 and 3-3). Further, rather than address inconsistencies regarding the desert iguana, desert night lizard, Mojave rattlesnake, and speckled rattlesnake, the UBWR simply removed those species from Table 3-2 without explanation. See id. at 3-14 to -16. If those species were previously identified as species of concern with ranges encompassing the pipeline Project, then the UBWR must explain their omission in the latest draft study report. The final study report on special status wildlife species must clarify these apparent inconsistencies and omissions.*

**UDWRe Response:**

**Tables 3.2 and 3.3 have been revised to address the comment.**

**Kaibab Tribe Comment 2:**

*(Section 3.4.3)*

*The Kaibab Tribe previously commented that the UBWR was dismissive of tribal wildlife species of cultural concern. 2011 Comments at 35. The UBWR made no changes to its analysis of tribal wildlife species of cultural concern in its latest draft report, and did not describe any attempts to obtain additional information from the Kaibab Tribe. See Revised Draft Study Report 13 at 3-30*



to -31. The final study report on special status wildlife species must include information regarding tribal wildlife species of cultural concern.

**UDWRe Response:**

**Chapter 3.4.3 - Tribal Wildlife Species of Cultural Concern of Final Study Reprt 13 – Special Status Wildlife Species has been revised to read:**

**“The Kaibab Band of Paiute Indians list of wildlife of cultural concern contains multiple general categories of wildlife, generally without specific species designation. Representatives of some of the categories of species of tribal concern are included in the species discussed in the preceding sections. Most of the categories do not contain specifically listed state or agency species of concern and they will not be individually described for the purposes of this analysis. Impacts are analyzed on the same basis as the described wildlife species in the preceding sections and the effects determination described in Section 4.5 and Section 4.6.”**

**Chapter 4 Comments:**

**USFWS Comment 1:**

*(Section 4.2.2, Pages 4-2 to 4-3)*

**Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern:**

*Unlike the MBTA, removal of an unoccupied eagle nest without a permit is a violation of the BGEPA. In addition, indirect effects of a project (e.g., loss of habitat or prey base) and disturbance of eagles could result in take which would be a violation of the Eagle Act (50 CFR 22.3).*

**UDWRe Response:**

**The following sentences have been added to Section 4.2 of Final Study Report 13 – Special Status Wildlife Species:**

**“The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), further defines "Disturb" to mean: “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. Unlike the MBTA, the removal of an unoccupied eagle nest with a permit issued by the UFWS would be a violation of the Bald and Golden Eagle Protection Act (50 CFR 22.3.Definitions).”**

**USFWS Comment 2:**

*(Section 4.2.2, Page 4-3)*

**Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern:**

*Contrary to the statement in the document, the definitions of "take" differ between the ESA, MBTA, and BGEPA. Particularly, the ESA includes "harm and harass" and the BGEPA includes*

*"molest and disturb." These terms are not included in the MBTA definition of take. Please ensure that all definitions are accurate.*

**UDWRe Response:**

**The following sentences have been added to Section 4.2 of Final Study Report 13 – Special Status Wildlife Species:**

**“The MBTA provides that it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory exceptions apply. Take is defined in regulations as: ‘pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.’ ” The Migratory Bird Treaty Act of 1918, as amended, (MBTA) (16 U.S.C. 703-712; Ch. 128; July 13, 1918) provides that it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. As described above, the MBTA makes it unlawful to “take” a migratory bird (or its nest or eggs). US FWS’s rules define “take” for MBTA purposes to mean to “pursue, hunt, shoot, wound, kill, trap, capture, or collect.” (50 C.F.R. § 10.12)”**

**USFWS Comment 3:**

*(Section 4.3.3, Pages 4-3)*

**Virgin River Return Flows From LPP Water:**

*Additional analysis is needed regarding flows in the Virgin River. The Project should be evaluated to determine impacts on species and critical habitat along the Virgin River, including, but not limited to: flows; timing of water delivery; changes in points of diversion; changes in points return flows; and changes in water quality.*

**UDWRe Response:**

**The Virgin River Daily Simulation Model was used to evaluate and analyze changes to the Virgin River discharge conditions. The model demonstrated that there was no measureable difference in river discharge. The model evaluated conditions starting at the time of projected project water delivery. At that time planned and anticipated projects would be implemented and the river system would be considered fully developed. In addition to the VRDSM, additional analysis was performed and it was determined that there would be no change in river habitat. The results of these two analysis efforts were presented to the Virgin River Resource Management and Recovery Program’s Technical Committee and also the Administrative Committee. The two committees include technical and administrative representatives from land management and resource management agencies including Utah’s Department of Natural Resources (and Division of Wildlife Resources), the Fish and Wildlife Service, the Bureau of Land Management, the National Park Service, the Forest Service, as well as other conservation groups including The Nature Conservancy, the Dixie Conservation Group, and the Utah Farm Bureau.**

**Section 4.3 - Potential Effects and Impacts Eliminated From Further Analysis - has been removed from Final Study Report 13 – Special Status Wildlife Species.**

**USFWS Comment 4:**

*(Section 4.4.1, Pages 4-5 and 4-24)*

**Threatened, Endangered and Candidate Species, California condor:**

*We recommend that you implement measures as applicant committed conservation and measures to reduce potential impacts to condors (e.g., speed limits, specific APLIC guidelines, elimination of waste). We also recommend that you expand your discussion of toxic substance spills and shooting if this is part of the Project action. Otherwise, we recommend deleting the sentence on toxic substance spills and shooting.*

**UDWRe Response:**

**Section 5.1 of Final Study Report 13 – Special Status Wildlife Species states that general mitigation measures include:**

- **Effects on wildlife resources would be avoided and minimized by following environmental hygiene and standard hazardous materials control procedures, restoration and erosion control procedures, air pollution prevention procedures, surface water protection procedures, noxious weed control procedures and wetland protection procedures.**
- **Construction sites would be kept free of trash, garbage and food refuse.**
- **New and upgraded overhead power transmission lines would be constructed to meet the most current edition of *Suggested Practices for Raptor Protection on Power Lines* (EEI 2006) and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012).**

**Section 5.2 stipulates coordination with the condor re-introduction team:**

- **Protocols for managing any condors that approach construction sites should be coordinated with the condor re-introduction team and no action should be taken if a condor visits a construction area until the team has been contacted and either approves an action or a team member comes to the site to personally manage the situation.**

**USFWS Comment 5:**

*(Section 4.4.2.2.1, Page 18)*

**Construction Impacts:**

*The document proposes a 0.25-mile buffer around occupied nests and roosts of raptors, including bald eagles and golden eagles. In most situations (and especially undisturbed habitats with little human activities), a 0.25-mile buffer is not adequate to prevent nest abandonment during the breeding season. Therefore, we recommend that you adhere to the buffer distances contained in the *Utah Raptor Guidelines* (Romin and Muck 2002), which include a 0.5-mile buffer around the nests of most raptor species and a 1.0-mile buffer around bald eagle nests. If work must occur within the spatial and temporal buffers, factors such as topography and the birds' habituation to existing disturbances may allow adjustment to the recommended buffers, but only on a site-specific basis. We recommend the larger 1.0-mile buffer for bald eagles and golden eagles, because of the possibility of take associated with disturbance (50 CFR 22.3).*

**UDWRe Response:**

**Section 4.4.2.2.1 of Final Study Report 13 – Special Status Wildlife Species has been revised to read:**

**“Raptor nests and roost sites should be surveyed and monitored and no construction activity should be performed within spatial and seasonal buffers identified in the Utah Raptor Guidelines (Romin and Muck 2002) which includes a 0.5 mile buffer around the nests of most raptors species and one-mile buffer around bald eagle nests. No eagles and no eagle nests were found during aerial and ground surveys throughout the entire LPP Project alignment. The applicant proposes additional surveys for eagle nests prior to any construction activities and a 0.25-mile buffer of occupied nests.”**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "impact analyses," PLP at P-1, this chapter must be considered incomplete. The final study report on special status wildlife species must include the additional information concerning impact analyses, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Final Study Report 13 Chapter 4 Environmental Consequences “analyzes Lake Powell Pipeline (LPP) project effects on federally listed threatened, endangered and candidate wildlife species, sensitive species and species of concern, and tribal wildlife species of cultural concern.”**

**Kaibab Tribe Comment 2:**

*(Section 4.2.2)*

*The Kaibab Tribe previously commented that the UBWR must explain how it determined that the significance criteria was the same for wildlife species of concern and tribal wildlife species of cultural concern, and whether it consulted with the Kaibab Tribe to make this conclusion. 2011 Comments at 35-36. The latest draft study report makes this same conclusion without explanation or an indication of whether the UBWR consulted with the Kaibab Tribe. See Revised Draft Study Report 13 at 4-2 to -3. The final study report on special status wildlife species must include information regarding tribal wildlife species of cultural concern and the UBWR's attempts to consult with the Kaibab Tribe on this matter.*

**UDWRe Response:**

**Refer to the responses to Kaibab Tribe Comment 2 Study Report 13.**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "protection, mitigation and enhancement measures," PLP at P-1, this chapter must be considered incomplete. The final study report on special status wildlife species must include the additional information concerning mitigation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the UBWR describes the standard construction and operating procedures it will implement during the construction, operation, and maintenance of the Lake Powell Pipeline Project, including additional measures for the California condor, Mexican spotted owl, Southwest willow flycatcher, and Mohave desert tortoise. Revised Draft Study Report 13 at 5-1 to -4. The UBWR does not describe any mitigation and monitoring measures to avoid and minimize impacts to wildlife species of cultural concern to the Kaibab Tribe, however. The UBWR is also required to consult with the Kaibab Tribe regarding such mitigation measures. The final study report on special status wildlife species must include mitigation and monitoring measures for wildlife of species of cultural concern to the Kaibab Tribe, developed after consultation and in coordination with the Kaibab Tribe.*

**UDWRe Response:**

**Refer to the responses to Kaibab Tribe Comment 1 in the Draft Study Report 13 Chapter 2 Comments.**

**Chapter 6 Comments:  
Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "unavoidable adverse impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on special status wildlife species must include the additional information concerning unavoidable adverse impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the UBWR generally describes the unavoidable adverse effects to special status wildlife species, including "tribal wildlife species of cultural concern," Revised Draft Study Report 13 at 6-1, but it does not indicate which specific species have the potential to be adversely affected. See id. at 6-1 to -5. The final study report on special status wildlife species must describe the unavoidable adverse impacts for each species of concern, and must identify which species are of federal, state, and/or tribal concern.*

**UDWRe Response:**

**Section 3.4.3 of Final Study Report 13 – Special Status Wildlife Species states:**

**“Impacts are analyzed on the same basis as the described wildlife species in the preceding sections and the effects determination described in Chapter 4.5 and Chapter 4.6.**

**Therefore impacts and effects to special status species such as the Greater Western Mastiff Bat that may occur on the KPIR would be included as a sensitive species on the KPIR since “bats” are included in the KPIR sensitive species list.**

**Impacts and effects to sensitive species would be similar in similar habitat across all landownerships in the project area.”**

**Kaibab Tribe Comment 2:**  
(Section 6.2.2.2)

*This section is incorrectly numbered 6.1.2.2. See Revised Draft Study Report 13 at 6-2. The UBWR should identify this section as number 6.2.2.2, not 6.1.2.2.*

**UDWRe Response:**

**The report has been revised to address the comment.**

**Chapter 7 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "cumulative impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on special status wildlife species must include the additional information concerning cumulative impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Final Study Report Chapter 7 Cumulative Effects and Impacts which “analyzes cumulative effects and impacts that may occur from construction and operation of the proposed LPP project when combined with the impacts of other past, present, and reasonably foreseeable future actions and projects after all proposed mitigation measures have been implemented”**

**Appendices Comments:**

**USFWS Comment 1:**

(Appendix B, Section 2, Page 1)

**Species Background, Southwestern Willow Flycatcher:**

*In Utah, critical habitat for the southwestern willow flycatcher does not include segments of the Colorado, Green, and San Juan Rivers; instead, designated critical habitat occurs only along the Virgin River.*

**UDWRe Response:**

**Appendix B initially references the 1994 critical habitat designation. The comment is addressed in the Final Study Report 13 Section 3.3.3.4 Designated Critical Habitat**

**Southwestern willow flycatcher critical habitat has been designated along the Virgin River in northwestern Arizona and southwestern Utah (Virgin Management Unit). (USFWS 2010d; USFWS 2010e). This habitat extends from approximately 6.9 miles north of the headwaters of Lake Mead in Nevada to a point approximately 1.4 miles north of the Washington Fields Diversion in Utah**



(USFWS 2010f). The project area is proximate to the stream segments designated as critical habitat within the Virgin Management Unit of the Lower Colorado Lower Colorado Recovery Unit and the Paria River north of US 89 of the Powell Management Unit (FR Vol 78 No. 2 January 3, 2013).

**USFWS Comment 2:**

*(Appendix B, Section 2, Page 1)*

**Species Background, Southwestern Willow Flycatcher:**

*In addition to the Powell Management Unit, the Project occurs within the Middle and Virgin Management Units within the Lower Colorado Recovery Unit of the southwestern willow flycatcher. Surveys should occur in these management units within suitable and potentially suitable habitat.*

**UDWRe Response:**

**No disturbance or project activities are to take place within or near any designated critical habitat with the Lower Colorado Recovery Unit. Modeling of the Virgin River discharge conditions and habitat conditions found no change from without the project and project implementation. Thus, no Southwestern Willow Flycatcher surveys of the Virgin River are required.**

**Refer to the responses to USFWS Comment 1 and USFWS Comment 3 in this section.**

**USFWS Comment 3:**

*(Appendix B, Section 3, Table 1, Page 3)*

**Site Descriptions and Evaluations, Table 1:**

*In Table 1 of the 2009 report and the subsequent discussion there are six sites where southwestern willow flycatcher surveys were conducted in 2009, but these sites are not recommended for future surveys. If suitable habitat occurs, then surveys should be conducted if those areas will be affected directly through habitat alteration or indirectly through noise in close proximity to suitable habitat. All six areas are described as having suitable habitat. If there is a valid reason why future surveys are not recommended, that reason should be explained in detail.*

**UDWRe Response:**

**Final Study Report 13 Section 5.4.1 - Construction has been revised to read:**

- **“Clearing of the pipeline construction corridor through riparian areas near the Paria River would be scheduled outside of the willow flycatcher breeding and nesting season, generally May through July.**
- **Habitat areas determined to be unsuitable in 2009 would be evaluated for suitability based on presence of primary constituent elements. Protocol surveys would be conducted within suitable habitat prior to construction to document presence/absence of southern willow flycatcher.”**

**USFWS Comment 4:**

*(Appendix B, Section 3, Table 1, Page 3)*



**Site Descriptions and Evaluations, Table 1:**

*We recommend that southwestern willow flycatcher surveys be repeated in suitable and potentially suitable habitat in the breeding season prior to construction. Riparian conditions change and areas that were not suitable or not occupied in 2009 may become suitable or occupied in future years.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 3 in this section.**

**USFWS Comment 5:**

*(Appendix C, Section 2, Page 5)*

**Species Background, Southwestern Willow Flycatcher:**

*In Utah, critical habitat for the southwestern willow flycatcher does not include segments of the Colorado, Green, and San Juan Rivers; instead, designated critical habitat occurs only along the Virgin River.*

**UDWRe Response:**

**Refer to the response to USFWS Comment 1 in this section.**

**USFWS Comment 6:**

*(Appendix D, Section 1, Page 1)*

**Introduction:**

*Please include the beginning and ending dates of all surveys.*

**UDWRe Response:**

**Section 1 - Introduction revised to include beginning and ending survey dates – Appendix B of Appendix D includes individual survey data sheets that include the date of each survey.**

## **Draft Study Report 14 – Transportation:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 14: Transportation (Nov. 30, 2015) ("Revised Draft Study Report 14") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 36-39. The UBWR states that Revised Draft Study Report 14 is "considered complete or nearly complete," PLP at P 1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 14 is noncompliant with Study Plan 14 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**The comment has been noted. The comments have been reviewed and included in the text where appropriate.**

***Chapter 1 Comments:***

**Kaibab Tribe Comment 1:**

*(Section 1.5.2)*

*The Kaibab Tribe previously commented that the UBWR ignored issues of tribal concern, including compliance with tribal regulations and resource management goals and impacts to TCPs. 2011 Comments at 36. The UBWR continues to ignore issues of tribal concern in its latest draft study report. See Revised Draft Study Report 14 at 1-23. The final study report on transportation must identify issues of tribal concern, including compliance with tribal regulations and impacts to TCPs.*

**UDWRe Response:**

**Tribal concerns were included in Section 1.5.2. Tribal concerns and requirements have been reviewed and incorporated into Study Report 14 as appropriate.**

***Chapter 2 Comments:***

**Kaibab Tribe Comment 1:**

*(Section 2.2)*

*The Kaibab Tribe previously commented that the UBWR made inappropriate assumptions regarding Utah and Arizona transportation goals and no adverse effects to those goals. 2011 Comments at 37. The Kaibab Tribe also commented that the UBWR must take tribal transportation goals into account. Id. The UBWR continues to make the same assumptions and does not describe any efforts to obtain tribal transportation goals in its latest draft report. See Revised Draft Study Report 14 at 2- 1 to -2. The final study report on transportation must include this information.*

**UDWRe Response:**

**Tribal transportation goals and planning information has been reviewed and incorporated.**

**Kaibab Tribe Comment 2:**

*(Section 2.4)*

*The Kaibab Tribe previously commented that the UBWR failed to mention tribal resource management goals. 2011 Comments at 37. The latest draft report continues to ignore tribal resource management goals and does not explain any attempts by the UBWR to obtain such information from the Kaibab Tribe. See Revised Draft Study Report 14 at 2-2 to -6. The final study report on transportation must include this information.*

**UDWRe Response:**

**Tribal transportation goals and planning information has been reviewed and incorporated.**

**Kaibab Tribe Comment 3:**

(Section 2.5.2)

*The Kaibab Tribe previously commented that the UBWR should better describe its field investigations. 2011 Comments at 37. The UBWR has not updated any information regarding the field investigations in its latest draft study report, however. See Revised Draft Study Report 14 at 2-6. The final study report on transportation should contain a better description of the activities performed on the field investigations.*

**UDWRe Response:**

**Additional information regarding field investigations was added to the text.**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

(Section 3.2.1.2)

*The Kaibab Tribe previously commented that the UBWR must mentions rights-of-way across tribal lands and analyze potential tribal crossings in consultation with the Kaibab Tribe. 2011 Comments at 37-38. The Kaibab Tribe also commented that the UBWR should describe the legal requirements for rights-of-way across tribal lands. Id. The UBWR did not mention rights-of-way across tribal lands or discuss the legal requirements for such rights-of-way in its latest draft study report. See Revised Draft Study Report 14 at 3-7. The final study report on transportation must describe the legal requirements for obtaining a right-of-way across tribal lands.*

**UDWRe Response:**

**Information noting that ROWs within tribal lands must be coordinated with tribal officials has been added to the text.**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

(Section 4.1)

*The Kaibab Tribe previously commented that the UBWR failed to consider impacts to TCPs, as required by Study Plan 14. 2011 Comments at 38. The UBWR has still not addressed such impacts in the latest draft study report. See Revised Draft Study Report 14 at 4-1. "the final study report on transportation must include significance criteria for impacts to TCPs.*

**UDWRe Response:**

**Tribal transportation plan, goals, and impact criteria were reviewed and included as appropriate.**

**Kaibab Tribe Comment 2:**

(Section 4.1.3)

*The Kaibab Tribe previously commented that the UBWR failed to list tribal resource management goals, in addition to federal and state resource management goals. 2011 Comments at 38. The UBWR still does not list tribal resource management goals in its latest draft study report. See*

*Revised Draft Study Report 14 at 4-1. The final study report on transportation must include information regarding tribal resource management goals.*

**UDWRe Response:**

**The Kaibab Tribe resource management goals has been included in the text.**

**Kaibab Tribe Comment 3:**

*(Section 4.1.4)*

*The Kaibab Tribe previously commented that non-compliance with tribal right-of-way requirements, in addition to federal and state requirements, would be a significant impact. 2011 Comments at 38. The latest draft study report continues to state that non-compliance with federal and state right-of-way requirements would be a significant impact and does not mention any tribal right-of-way requirements. See Revised Draft Study Report 14 at 4-1. The final study report on transportation must include non-compliance with tribal right-of-way requirements as a significant impact.*

**UDWRe Response:**

**The text has been revised that all ROWs within tribal lands must be coordinated and in consultation with tribal officials**

**Kaibab Tribe Comment 4:**

*(Section 4.3)*

*The Kaibab Tribe previously commented that the UBWR did not consider impacts to tribal resource management goals and TCPs. 2011 Comments at 38. The UBWR has still not addressed such impacts in its latest draft study report. See Revised Draft Study Report 14 at 4-2 to -4. This failure to consider impacts to TCPs contravenes Study Plan 14, and the final study plan on transportation must include information regarding impacts to tribal resource management goals and TCPs.*

**UDWRe Response:**

**The text has been revised that all ROWs within tribal lands must be coordinated and in consultation with tribal officials**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 5.1.1)*

*The Kaibab Tribe previously commented that the UBWR must coordinate with tribal officials, in addition to federal and state agencies, in order to obtain any required permits for traffic controls and traffic plans during pipeline construction and operation. 2011 Comments at 39. The latest draft study report continues to overlook the need to coordinate with the Kaibab Tribe concerning construction and operation activities on tribal lands, see Revised Draft Study Report 14 at 5-1 to -2, and the final study report on transportation must correct this significant oversight.*

**UDWRe Response:**

**Tribal transportation management goals and plans have been reviewed and incorporated into the text.**

## **Draft Study Report 15 – Vegetation Communities:**

### ***General Comments:***

#### **Kaibab Tribe Comment 1:**

*As described below, the revised Lake Powell Pipeline Project Vegetation Resources Studies: Draft Vegetation Communities Report (Nov. 30. 2015) ("Revised Draft Study Report 15") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the vegetation communities study report. See 2011 Comments at 39-40. In addition, the UBWR states that Revised Draft Study Report 15 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBWR also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data. Information and associated impact analyses performed will be updated in revised draft study reports and filed with the Commission as soon as they are completed." Id. The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study reports after they are revised further. As it stands, Revised Draft Study Report 15 is largely incomplete because it does not include protection, mitigation, and enhancement measures and does not discuss either cumulative or unavoidable adverse impacts. Thus, the Commission should remand Revised Draft Study Report 15 to the UBWR for further revisions that are consistent with these comments and that fill in the substantial informational gaps.*

#### **UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

### ***Chapter 3 Comments:***

#### **Kaibab Tribe Comment 1:**

*The Kaibab Tribe previously commented that the UBWR failed to describe its field activities on tribal lands. 2011 Comments at 39-40. The Kaibab Tribe also previously commented that the UBWR did not describe its efforts, if any, to consult with the Kaibab Tribe regarding plant species of cultural concern. Id. The UBWR also failed to describe its field activities and tribal consultations in the latest draft study report. See Revised Draft Study Report 15 at 3-1 to -12. The final study report on vegetation communities must include information about both the UBWR's field activities on Kaibab lands and its consultations with the Kaibab Tribe.*

#### **UDWRe Response:**

### ***Chapter 4 Comments:***

### **Kaibab Tribe Comment 1:**

*The Kaibab Tribe previously commented that the UBWR must consult with the Kaibab Tribe to obtain information about plants of cultural concern and must include this information in the study report. 2011 Comments at 40. The latest draft study report does not identify any plants of cultural concern to the Kaibab Tribe or describe the UBWR's efforts to consult with the Kaibab Tribe regarding this matter. See Revised Draft Study Report 15 at 4-1 to -160. The final study report on vegetation communities must include this information.*

### **UDWRe Response:**

**The text has been revised to address the comment.**

### **Chapter 5 Comments:**

#### **Kaibab Tribe Comment 1:**

*The Kaibab Tribe previously commented that the draft study report on vegetation communities is incomplete because it abruptly concluded with the results of vegetation mapping and did not identify significance criteria, describe potential impacts to vegetation communities, or include any mitigation measures. 2011 Comments at 40. The latest draft study report on vegetation communities is similarly incomplete. See PLP at P-1 (stating Revised Draft Study Report 15 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts"); see generally Revised Draft Study Report 15. Again, the final study report on vegetation communities must include important information that is currently missing, including information regarding significance criteria, potential cumulative and unavoidable adverse impacts, and protection, mitigation, and enhancement measures to avoid and minimize impacts to plant communities. Further, the UBWR must provide the public with an opportunity to review and comment on the new information and data prior to its submission of a final study report on vegetation communities.*

### **UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

## **Draft Study Report 16 – Visual Resources:**

### **General Comment:**

#### **BLM Comment 1:**

*(Pages 13-15)*

*According to Contrast Rating 13 near the Toadstools TH, it appears that the pipeline alignment veers north away from the highway significantly which may put the alignment in the Cockscomb WSA. The scale of the maps provided makes it difficult to determine this, but it should be checked.*

### **UDWRe Response:**

**The pipeline alignment is adjacent to, but not within, the WSA.**

**Volume 10:**

**BLM Comment 2:**

*(Pages 18-19)*

*These study reports contain the visual simulations for the project. Volume 10 is specific to the St. George Field Office. The analysis for the project in Chapter 3 of the PLP correctly identifies that the project would not meet VRM Class II objectives for the Hurricane Cliffs Afterbay Reservoir, the Hurricane Cliffs Hydro Station, and the Hurricane Cliffs Hydro Afterbay. However, the simulations for the project in the Hurricane Cliffs area are either missing information or the locations chosen to depict the simulations are poor choices for actually disclosing the true appearance of the project. In other words, the visual impact of introducing industrial facilities into a natural area along the Hurricane Cliffs Road is likely to be far more dramatic than what is portrayed in these simulations. The construction drawings (PLP Chapter 3, Figure 3-20, Page 4, and Figure 3- 23, Page 8, Hurricane Cliffs Pumped Storage Site Plans) show the Hurricane Cliffs Road crossing the Tailrace Channel via a bridge. Adjacent to this bridge on the east side is an access road to the facility. This road is not shown in the visual simulation. The 345kv transmission line that runs west from the Afterbay Powerhouse is also not shown in these simulations, nor is the fence that would surround the entire Afterbay Reservoir. The location chosen for the two simulations on pages 13-15 are too far north to adequately disclose the visual impacts. A better location for the simulations would be looking due east and due west from the center of the bridge that crosses the Tailrace Channel. This would be looking directly at the Hurricane Cliffs Pumped Storage Power House, and in the opposite direction, at the Afterbay Reservoir and the Tailrace Channel.*

**UDWRe Response:**

**Current simulations have been revised to encompass the comments to as great a degree as possible. New simulations have not been created.**

**BLM Comment 3:**

*The construction drawing in the PLP, Chapter 3, Vol. 4, page 12, shows the Afterbay dam structure to be 120 feet tall. The visual simulations for this structure were performed too far south to adequately portray how this dam will dominate the landscape. It is true that this structure would be allowed within the existing VRM Class IV, but 120 feet is both tall, imposing, and out of character in this landscape. This particular area has heavy recreation traffic and it will be important to adequately portray the impacts. It would be worthwhile to have a visual simulation that is much closer to the dam and contains identifiable features (like a vehicle) that allows the viewer to understand the scale. The existing simulation could be considered misleading.*

**UDWRe Response:**

**The current simulation has been modified and now includes a vehicle for scale reference.**

**Kaibab Tribe Comment 1:**



*As described below, the revised Draft Study Report 16: Visual Resources (Nov. 30, 2015) ("Revised Draft Study Report 16") fails to address most of the Kaibab Tribe's previous comments on earlier drafts of the visual resources study report. See 2012 Comments at 9-12; 2011 Comments at 41-43. In addition, the UBWR states that Revised Draft Study Report 16 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBWR also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data, information and associated impact analyses performed will be updated in revised draft study reports and filed with the Commission as soon as they are completed." Id. The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study reports after they are revised further. As it stands, Revised Draft Study Report 16 is largely incomplete because it does not include important information regarding protection, mitigation, and enhancement measures and either cumulative or unavoidable adverse impacts. Thus, the Commission should remand Revised Draft Study Report 16 to the UBWR for further revisions that are consistent with these comments and that fill in the substantial informational gaps.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Chapter 2 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 2.3.1)*

*The Kaibab Tribe previously commented that the UBWR's definition of the "foreground" zone as within 0.5 miles of the project was inconsistent with Study Plan 16's definition for the significance criteria as within 0.75 miles of the project. 2012 Comments at 9; 2011 Comments at 41. The Kaibab Tribe also commented that Study Plan 16 was internally inconsistent because in the discussion of baseline conditions Study Plan 16 defined the foreground zone as within 0.5 miles. 2012 Comments at 9; 2011 Comments at 41. The latest draft report continues to define the foreground zone as within 0.5 miles of the project without explaining why the UBWR ignored the definition in Study Plan 16. Revised Draft Study Report 16 at 2-2. The final study report on visual resources must clarify these inconsistencies.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 2:**

*(Section 2.3.2)*

*The Kaibab Tribe previously commented that the UBWR adopted four categories for rating the magnitude of change in landscape character that differ in name and description from the categories listed in Study Plan 16. 2012 Comments at 9; 2011 Comments at 41. The latest draft study report continues to use the same categories without explanation for why they are different than the categories listed in Study Plan 16. See Revised Draft Study Report 16 at 2-3. The final study report on visual resources must clarify the discrepancy.*

**UDWRe Response:**

**Magnitude of change categories have been amended and refined.**

**Kaibab Tribe Comment 3:**

*(Section 2.3.3)*

*The Kaibab Tribe previously commented that the UBWR must clarify certain discrepancies concerning the height of exhaust stacks above the associated buildings. 2012 Comments at 10. Although Section 1.2.5.3 states that stacks would rise either 25 or 61 feet above the top of the buildings, Revised Draft Study Report 16 at 1-18, this section of the revised draft study report still says that "increased visibility is based on an additional height of 20 feet above the buildings, representing the approximate amount of the exhaust stacks considered to be distinguishable." Id. at 2-4. The final study report on visual resources must clarify this discrepancy.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

*The Kaibab Tribe previously commented that the UBWR must identify its efforts to consult with the Kaibab Tribe regarding existing visual resources, as required by Study Plan 16. 2012 Comments at 10; 2011 Comments at 41-42. The latest draft study report remains silent on this issue, however. See Revised Draft Study Report 16 at 3-1 to -28. The final study report on visual resources must identify efforts to consult with the Kaibab Tribe regarding the existing visual resources.*

**UDWRe Response:**

**Coordination has determined that there are no current policies or management directives for visual resources.**

**Kaibab Tribe Comment 2:**

*(Section 3.1.2)*

*The Kaibab Tribe previously commented that the UBWR must state that the Southeast Corner Alternative also crosses tribal lands, and must identify efforts to consult with the Kaibab Tribe regarding the cultural context of the project. 2012 Comments at 10-11; 2011 Comments at 42. The UBWR has still not done so in its latest draft study report, however. See Revised Draft Study Report 16 at 3-3 to -5. The final study report on visual resources must include this information.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Chapter 4 Comments:**

**Reclamation Comment 63:**

*(Section 4.5.6.1, Page 4-55)*

*The compliance for these VAUs can be found in “Error! Reference source not found.”*

*What should be in this location where it say’s error?*

**UDWRe Response:**

**The text has been revised to address the comment.**

**Reclamation Comment 64:**

*(Section 4.6.6, Page 4-58)*

*Compliance with Management Objectives*

*Should this section as well as others that state BLM and NPS comparisons include Bureau of Reclamation information as well?*

**UDWRe Response:**

**Comment needs clarifying.**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning “impact analyses,” PLP at P-1, this chapter must be considered incomplete. The final study report on visual resources must include the additional information concerning impact analyses, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 2:**

*(Section 4.1)*

*The Kaibab Tribe previously commented that the UBWR must reconcile the discrepancies between the draft study reports and Study Plan 16 regarding the definition of the foreground zone. 2012 Comments at 11; 2011 Comments at 42. The Kaibab Tribe also previously commented that the UBWR must identify significance criteria for impacts to TCPs. 2012 Comments at 11; 2011 Comments at 42. The UBWR neither clarified the definition of the foreground zone nor considered impacts to TCPs in its latest draft study report. See Revised Draft Study Report 16 at 4-l. The final study report on visual resources must include significance criteria related to TCPs, such as sacred landscapes that are important to the Kaibab Tribe.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 3:**

*(Section 4.6.1)*

*The Kaibab Tribe previously commented that the UBWR likely intended to reference the "Southeast Corner Alternative" rather than the "South Alternative" when it stated that the South Alternative alignment would follow the Navajo-McCullough transmission line corridor through tribal land. 2012 Comments at 11. The UBWR makes the same apparent mistake in its latest draft study report. See Revised Draft Study Report at 4-57. If the UBWR intended to reference the "Southeast Corner Alternative," the final study report on visual resources must correct this mistake.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "protection, mitigation and enhancement measures," PLP at P-1, this chapter must be considered incomplete. The final study report on visual resources must include the additional information concerning mitigation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR. Nonetheless, the Kaibab Tribe previously commented that mitigation measures must be developed in consultation with the Tribe, as required by Study Plan 16, and that the UBWR did not identify any efforts to engage in such consultation. 2012 Comments at 11-12; 2011 Comments at 43. The UBWR continues its silence in the latest draft report on whether any mitigation measures were developed - in consultation with the Kaibab Tribe. See Revised Draft Study Report 16 at 5-1 to -3. The final study report on visual resources must include this information, and the UBWR must consult with the Kaibab Tribe regarding mitigation measures to avoid and minimize impacts to visual resources of cultural significance to the Tribe.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Chapter 6 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "unavoidable adverse impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on visual resources must include the additional information concerning unavoidable adverse impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Chapter 7 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 16 will be updated with pending additional data and information concerning "cumulative impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on visual resources must include the additional information concerning mitigation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR. Nonetheless, the Kaibab Tribe previously commented that this chapter was incomplete. 2012 Comments at 12; 2011 Comments at 43. Although the UBWR significantly revised this chapter since it issued the modified draft study report in 2012, compare Revised Draft Study Report 16 at 7-1 to -2, with Modified Study Report 16, Revised Draft Study Report 16 remains similarly incomplete.*

*First, the prior draft study report identified six other projects with the potential to have cumulative impacts with the pipeline project at issue, and the UBWR promised to include "detailed information" about these projects when it filed its Preliminary Permit Application. Modified Draft Study Report 16 at 7-1 (identifying Southern Corridor Highway, Jackson Flat Reservoir, Anderson Junction Reservoir, Ash Creek Pipeline, Kern River-Hurricane Natural Gas Pipeline, and federal resource management plans for local National Conservation Areas). However, without offering any explanation, the UBWR does not include any of these six projects in its latest draft study report, and instead it identifies five different actions. See Revised Draft Study Report 16 ch. 7. The UBWR must explain why the six original projects are no longer considered to have the potential for cumulative impacts.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

**Kaibab Tribe Comment 2:**

*Second, the UBWR does not provide any detailed information about either the six original actions or the five actions it identified later, as it promised it would do when it filed its Preliminary Permit Application. The final study report on visual resources must explain the removal of the six original actions, and include detailed information regarding any actions finally determined to have the potential for cumulative impacts with the Lake Powell Pipeline Project. Again, the final study report on visual resources must include the above-described information concerning cumulative impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The comment has been addressed as appropriate with the available information.**

## **Draft Study Report 17 – Surface Water Quality:**

**General Comments:**

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 17: Surface Water Quality (Nov. 30, 2015) ("Revised Draft Study Report 17") fails to address most of the Kaibab Tribe's previous comments*

*on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 43-44. In addition, the UBWR states that Revised Draft Study Report 17 "will be updated with pending information and modeling results" from Reclamation, and that "these modeling results will affect other resources included in the listed study reports," and it promises to file a final study report in April 2016 that addresses the comments received here as part of its license application. PLP at P-2. This is insufficient. The Kaibab Tribe must have an opportunity to comment on the pending information and modeling results prior to their inclusion in a "final" report. As it stands, Revised Draft Study Report 17 is substantially incomplete and noncompliant with Study Plan 17, and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**Chapter 1 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 1.5)*

*The Kaibab Tribe previously commented that the UBWR did not list all of the study objectives in the draft study report that were previously identified in Study Plan 17. 2011 Comments at 43-44. The UBWR made no changes to the list of study objectives in its latest draft study report. See Revised Draft Study Report 17 at 1-23. The final study report on surface water quality must account for all of the study objectives identified in Study Plan 17.*

**UDWRe Response:**

**Chapter 2 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 2.1)*

*The Kaibab Tribe previously commented that the UBWR did not identify any tribal data sources and that tribal resource management goals must be considered. 2011 Comments at 44. The Kaibab Tribe also commented that the UBWR must describe its attempts to obtain tribal data. Id. The UBWR remains silent on its use of tribal data in the latest draft report. See Revised Draft Study Report 17 at 2-1. The final study report on surface water quality must include this information.*

**UDWRe Response:**

**Kaibab Tribe Comment 2:**

*(Section 2.2)*

*The Kaibab Tribe previously commented that the UBWR failed to describe any field investigations, as required by Study Plan 17. 2011 Comments at 44. The UBWR has still not*



*described any field investigations in its latest draft study report. See Revised Draft Study Report 17 at 2-1 to -2. The final study report on surface water quality must identify and describe all field investigations that the UBWR was required to conduct pursuant to Study Plan 17.*

**UDWRe Response:**



***Chapter 4 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 17 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on surface water quality must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

***Chapter 6 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 17 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on surface water quality must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

***Chapter 7 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 17 "will be updated with pending information and modeling results" from Reclamation that "will affect" certain resources, PLP at P-2, this chapter must be considered incomplete. The final study report on surface water quality must include the additional information and modeling results from Reclamation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**



Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.

## **Draft Study Report 18 – Surface Water Resources:**

### ***General Comments:***

#### **Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 18: Surface Water Resources (Nov. 30, 2015) ("Revised Draft Study Report 18") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 44-45. In addition, the UBWR states that Revised Draft Study Report 18 "will be updated when CRSS and Virgin River Daily Simulation Model (VRDSM) results are incorporated and coordination with federal agencies on LPP Project draft management plans in preparation are completed," and it promises to file a final study report in April 2016 that addresses the comments received here as part of its license application, PLP at P-2, but this is insufficient. The Kaibab Tribe must have an opportunity to comment on the pending modeling results prior to their inclusion in a "final" report. As it stands, Revised Draft Study Report 18 is substantially incomplete and noncompliant with Study Plan 18, and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

#### **UDWRe Response:**

Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.

### ***Chapter 4 Comments:***

#### **Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 18 will be updated with pending information and modeling results, PLP at P-2, this chapter must be considered incomplete. The final study report on surface water resources must include the additional information and modeling results, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

#### **UDWRe Response:**

**The CRSS model analysis has been modified to include hydrologies based on climate change projections and Appendix 2 has been updated and the corresponding analysis in the text of Study Report 18 has been modified.**

### ***Chapter 5 Comments:***

#### **Kaibab Tribe Comment 1:**

*(Section 5.1.1)*

*The Kaibab Tribe previously commented that the UBWR improperly dismissed the need for mitigation. 2011 Comments at 45. The UBWR continues to mostly dismiss the need for mitigation measures if best management practices are implemented, and states that best management practices would include coordination with federal and state agencies. Revised Draft Study Report 18 at 5-1. The UBWR must also coordinate with the Kaibab Tribe, however, and the final study report on surface water resources must include appropriate mitigation measures.*

**UDWRe Response:**

**The text has been revised to read “federal, state, local and tribal agencies”**

***Chapter 6 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 18 will be updated with pending information and modeling results, PLP at P-2, this chapter must be considered incomplete. The final study report on surface water resources must include the additional information and modeling results, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The CRSS model analysis has been modified to include hydrologies based on climate change projections and Appendix 2 has been updated and the corresponding analysis in the text of Study Report 18 has been modified.**

***Chapter 7 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 18 will be updated with pending information and modeling results, PLP at P-2, this chapter must be considered incomplete. The final study report on surface water resources must include the additional information and modeling results, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**The CRSS model analysis has been modified to include hydrologies based on climate change projections and Appendix 2 has been updated and the corresponding analysis in the text of Study Report 18 has been modified.**

## **Draft Study Report 19 – Part 1, Climate Change:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 19: Climate Change (Nov. 30, 2015) ("Revised Draft Study Report 19") fails to address most of the Kaibab Tribe's previous comments*

*on an earlier draft of the climate change study report. See 2011 Comments at 46. The UBWR states that Revised Draft Study Report 19 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 19 is noncompliant with Study Plan 19 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

*The Kaibab Tribe previously commented that the UBWR did not comply with Study Plan 19 because it failed to analyze the project's potential effects on Indian tribes and other water users in the Colorado River Basin and did not provide cost estimates for the various water supply options. 2011 Comments at 46. The revised draft study report does not address the Kaibab Tribe's previous comment. The UBWR must analyze the potential effects of climate change on Indian tribes in the Colorado River Basin. It is well-documented that Indian tribes are disproportionately and uniquely impacted by climate change, see generally NAT'L WILDLIFE FED'N, *FACING THE STORM: INDIAN TRIBES, CLIMATE-INDUCED WEATHER EXTREMES, AND THE FUTURE FOR INDIAN COUNTRY* (2011); NATURAL RES. LAW CTR., *NATIVE COMMUNITIES AND CLIMATE CHANGE: PROTECTING TRIBAL RESOURCES AS PART OF NATIONAL CLIMATE POLICY* (2007), so it is critical that the UBWR consider the effects of climate change on local Indian tribes in need of a permanent and reliable water supply.*

#### **UDWRe Response:**

**The following text has been added to Study Report 18 Surface Water Resources in Section 3.1 Water Regulation:**

**Therefore, the State of Utah's Colorado River rights from Lake Powell would be administered according to its water rights, whether it is utilized by Utah consistent with the No Action Alternative or through the Lake Powell Pipeline. According to the prior appropriation doctrine, the rights of senior water rights holders, including tribal water rights, must be protected with or without the LPP, regardless of hydrology, including potential hydrology affected by climate change. Under future climate change with lower streamflow, water available to junior water rights holders in the region could decline.**

#### **LPP Coalition Comment 1:**

*In considering the relationship between climate change and the Project, there are two distinct aspects to keep in mind. First, there is the question of how climate change (and rising temperatures in particular) will affect the background conditions against which the project will operate during its lifetime. Second, there is the question of how the energy demands of the project will generate greenhouse gas emissions that contribute to climate change and global warming. Both of these aspects are addressed in our comments below and need to be included in the Study Report.*

*In addition, the Coalition wants to establish that even if water is physically in the river and Utah is not using all of its remaining Colorado River Compact apportionment of 350,000 (AF), it does not guarantee the water is actually available. Before the Colorado River Compact was created in 1922 annual river flows were originally thought to be in the range of 18-21 million acre feet a year (MAFY) at Lees Ferry, Arizona. Lees Ferry is the dividing line between the Upper and Lower Colorado River Basin States. The Lower Basin States of Arizona, Nevada and California were apportioned 7.5 (MAFY) which are firm allocations and draw their water supply from Lake Mead. The Upper Basin States of Colorado, New Mexico, Wyoming and Utah were apportioned*

7.5 (MAFY) and these rights are more uncertain and variable because they are allocated only a percentage of what is left after obligations to the Lower Basin are met and are more dependent on stream flows. “Apportioned water in accordance with the Law of River exceeds the approximate 100 year average flow of river of 15 MAFY at Lees Ferry and is 16.4 MAFY.”<sup>25</sup> However, river flows at Lees Ferry during last 15 years have only been 12.5 (MAFY) and the reservoirs of Lake Powell and Lake Mead are only at 50 percent capacity. The rising temperatures from climate change indicate river flows will likely continue to decline. Therefore, even if UBWR claims its remaining water right is secure, in reality, it is not. We explain the reasons in our following comments.

#### UDWRe Response:

**The BOR basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in Final Study Report 19 - Climate Change.**

#### LPP Coalition Comment 2:

*In Scoping Document 2, the Commission stated that scoping was intended to serve as a guide to issues and alternatives to be addressed in the Environmental Impact Statement (EIS).<sup>26</sup> The public expressed concerns in the scoping process that should be addressed in the EIS.*

*“As shown in both the transcripts of the scoping meetings and in Appendix A, many individuals have provided either oral or written scoping comments, or both, concerning the Lake Powell Pipeline proposal. Many of the public comments express similar concerns or issues:*

- 1. Continued droughts and climate effects from human activity could put the supply of water from Lake Powell Reservoir at risk.”<sup>27</sup>*

*The Study Report results still do not detail the overall risk from climate change to the water supply for the Project. UBWR incorrectly claims it can divert water in dire conditions, and that, therefore, they do not have a responsibility to address the risk of climate change. On the contrary, the Commission Staff must require a detailed analysis from UBWR that proves their assumption about water availability is valid before the EIS process begins. Further, the staff must ensure the environmental information is accurate so that decision makers can understand the consequences of their decision. The Study Report lacks scientific accuracy that is both reasonable and objective that the agencies and the public can rely upon and must be revised.*

*This consideration also has implications for the NEPA analysis of the Project. More specifically, the Council on Environmental Quality (CEQ) has issued draft guidance documents recommending the use of “future baseline conditions” for NEPA analysis in situations where the background conditions against which a project operates will change due to climate change. With climate change, the amount of water being reduced in the Colorado River system because of raising temperatures and subject to loss through evaporation will increase with a corresponding decrease in the amount of water stored in the reservoir. The Commission Staff’s exclusive reliance on an existing conditions baseline for NEPA analysis would result in an inaccurate analysis of water available during the anticipate lifetime of the Project.*

<sup>26</sup> (Note: Citation missing from LPP Coalition document (UBWR))

<sup>27</sup> *Scoping of Environmental Issues for the proposed Lake Powell Pipeline Project, eLibrary no. 20080821-3005, p.7, (Aug. 21, 2008)*

**UDWRe Response:**

**Your comment has been noted. The BOR basin study, which the LPP Project documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report.**

**LPP Coalition Comment 3: Related to Study Report 18 – Surface Water resources**

**LPP 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.”<sup>28</sup>*

*The impact of climate change on water availability for the Project has been a controversial issue since scoping for the Project in 2008. Despite the intervening eight years and an acknowledged body of scientific study, UDWR has failed to integrate this impact into water availability modeling. Consequently, UDWR has not provided vital environmental information in the Study Report pursuant to the Study Plan. Similarly, by failing to undertake a meaningful analysis, the Study Report claims there will be no climate change-related impact on power generation. Without changes to the Study Report to incorporate the impact of climate change on water availability and power generation, the scientific record on which a new license is based will be fundamentally flawed.*

<sup>28</sup> Study Report 18, Reclamation Colorado River Model Report, Appendix 2, p. 2

**UDWRe Response:**

**The CRSS model analysis has been modified to include hydrologies based on climate change projections and Appendix 2 has been updated and the corresponding analysis in the text of Study Report 18 has been modified.**

**LPP Coalition Comment 4:**

**Study Plan: Section 19.2.1 Study Description**

*“The study will identify potential impacts of the Project on water supply.....and estimate potential effects of climate change and climate variability on Project operations and water deliveries.”<sup>47</sup>*

*These provisions of the Study Plan above have been totally left out of the Study Report. The Commission Staff should require UBWR to fully achieve the objectives in the Study Plan and address how climate change will affect water availability by providing various water supply scenarios for the Project. Further, the Commission Staff must insure the information in the Study Report is accurate in order that decision makers can understand the consequences. Consistently throughout the Study Report, UBWR uses the caveat that they do not need to address these issues because they can always pump water even in dire conditions – this is not substantiated by fact as noted in our various comments.*

<sup>47</sup> Study Plan, p. 215, (emphasis added)

**UDWRe Response:**

**The CRSS model was run under 112 climate influenced hydrologies. It shows Lake Powell pool elevation (availability) and releases. If more information is required, more model output will be needed from from CRSS.**

**LPP Coalition Comment 5:**

**Study Plan: Section 19.2.2 Issues and Data Needs**

*“The Bureau of Reclamation CRSS model will be used to determine potential effects on downstream water rights such as Navajo, Ute, Paiute and Hopi tribes.”<sup>43</sup>*

*This provision in the Study Plan has been left out of the Study Report. There is no analysis of Tribal reserved water rights in the Study Report and how they will be affected by the Project’s withdrawals at low reservoir levels. Consequently, they need to be included in the Study Report.*

<sup>43</sup> Study Plan Section 19.4.3, p. 219

**UDWRe Response:**

**Tribal reserved water rights downstream of the right for the Lake Powell Pipeline Project would not be measurably affected by construction and operation of the project even at low reservoir levels. Settled Tribal water right claims are earlier in priority than the State of Utah water right for the project and would therefore be satisfied before the right for the pipeline. Additionally the Upper Colorado River Basin States, in accordance with the 1922 Colorado River Compact, "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..." This requirement has been met each year and will continue to be met with the project in place. Finally, modeling of the project's impacts on the Colorado River below Glen Canyon Dam shows those impacts are so small they are not measurable.**

**LPP Coalition Comment 6:**

**Study Plan: Section 19.2.2 Goals and Objectives**

*“To provide a summary of the long-term water supply to Lake Powell and the potential effects on water supply from climate variation.”*

*These provisions of the Study Plan above have been totally left out of the Study Report. The Commission Staff should require UBWR to fully achieve the objectives in the Study Plan and address how climate change will affect water availability by providing various water supply scenarios for the Project. Further, the Commission Staff must insure the information in the Study Report is accurate in order that decision makers can understand the consequences. Consistently throughout the Study Report, UBWR uses the caveat that they do not need to address these issues because they can always pump water even in dire conditions – this is not substantiated by fact as noted in our various comments.*

**UDWRe Response:**



**The BOR basin study, which the LPP documents use extensively, provide climate change scenarios.**

**LPP Coalition Comment 7:**

**Study Plan: Section 19.3 Agency Resource Management Goals**

*The Study Plan states that it “will address resource management goals of Bureau of Reclamation.”<sup>57</sup> It also quotes the requirement under Federal Power Act section 10(a)(1) that: “[a]ny License issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.”<sup>58</sup>*

*UBWR fails to outline how the proposed Project fits into the goals of the Bureau of Reclamation’s Colorado River Basin Water Supply and Demand Study (Basin Study).*

*In addition, under FPA section 10(a)(1) each license must assure that a project is “best adapted to a comprehensive plan of development of the affected river basin for the beneficial uses of energy generation, water supply, flood control, recreation, and fish and wildlife. A project must serve the public interest in a river basin, and not just the interest in power generation.” However, with limited water resources remaining in the Colorado River this Project is an example of what should not be proposed without the agency using water efficiently and having accurate justification of its need. Washington County has the highest per capita water use in the nation at 325 gallons per capita day in 2010 and the cheapest water. Moreover, in Washington County Water Conservancy District’s 2015 Water Conservation Plan it will only save 40 gallons per capita day, or 14,000 (AF) and lower per capita water use to 289 gallons per capita day (gpcd) between the years 2010 to 2060.*

*The objectives of the Basin Study conform around a system of efficiency and conservation for existing projects. In other words, if UBWR were consistent with the goals of the Basin Study, it would start by using water more efficiently first before applying for more water from the Colorado River.*

*UBWR does not take into consideration the call for action to conserve water and use water efficiently by the Bureau of Reclamation (BOR) in their Basin Study, or the effort to keep Lake Powell above minimum power pool elevations. For instance, BOR confirmed in its Basin Study, “...absent future action; the Colorado River 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 6.8 million acre-feet (MAF) with a median of 3.2 MAF in 2060. The assessment of impacts to Basin resources found that any long-term imbalance will impair the ability of the Colorado River system to meet the needs of Basin resources resulting in negative impact (for example, reduced reliability of water deliveries for municipal and agricultural purposes, decreased hydropower generation, and reduced recreational opportunities).”<sup>59</sup>*

<sup>58</sup> Study Plan Section 18.3, p. 206

<sup>59</sup> 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), p. 3

**UDWRe Response:**



The next step of the BOR basin study is to identify strategies to address potential imbalances. The seven basin states and the Bureau of Reclamation are working on a comprehensive management plan. All plans will coincide with the law of the river, and LPP complies with that approach.

Washington County, the region benefiting most from the proposed Lake Powell Pipeline already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline target. It has started working towards an additional 10 percent conservation goal. The area's hot, arid climate coupled with high tourism and a high number of second homes drives the per capita use of water up but additional conservation is achievable. Water conservation will continue to be a high regional and state priority.

In order to meet future demand, a variety of strategies will need to be implemented. The LPP is just one of the strategies that will be used to meet future regional demand. Other strategies include further water conservation, treatment of water converted from agricultural to municipal, etc.

#### **LPP Coalition Comment 12:**

##### **Study Plan and NEPA Analysis of Project's Contribution to Climate Change**

*Distinct from the ways that climate change may impact the background conditions against which the Project will operate, there is also the question of how the energy demands of the Project will contribute to greenhouse gas ("GHG") emissions that in turn contribute to global warming. More specifically, there are many segments of the Project where large quantities of water will need to be pumped uphill for considerable distances. According to Project documents, the approximately 86,000 acre-feet of water diverted annually from Lake Powell (over the 40-50 year life of the project) will need to be lifted 2,000 feet. Pumping such large amounts of water uphill will require significant amounts of energy, and to the extent this production of this energy will or may contribute to climate change and global warming.*

*The PLP does not provide sufficient information on this question. The PLP assumes that hydropower from Glen Canyon Switchyard will be available in a timely matter to meet the energy needs of the Project, but provides scant documentation on when the power upgrades will be completed or analysis to support this assumption. More particularly, there is not adequate analysis regarding the amount of energy required to pump water during the lifetime of the Project and the entitlement of UBWR to receive such power from the hydroelectric facilities operated at Glen Canyon Dam. Given the uncertainties and reduced storage in Lake Powell, it seems foreseeable if not likely that the Project may need to rely on non-hydropower sources of energy such as fossil fuels.*

*Information about the climate change impacts associate with such fossil fuel energy production (to meet the energy needs of the project) was not provided in the PLP or the Study Reports. Without this information, Commission Staff cannot satisfy NEPA's requirement of providing an accurate project description and of identifying alternatives and mitigation measures to reduce the adverse impacts of the Project. How can a NEPA document assess what level of GHG emission mitigation is appropriate if the NEPA document fails to quantify the amount of GHG emissions that may be created by the Project?*

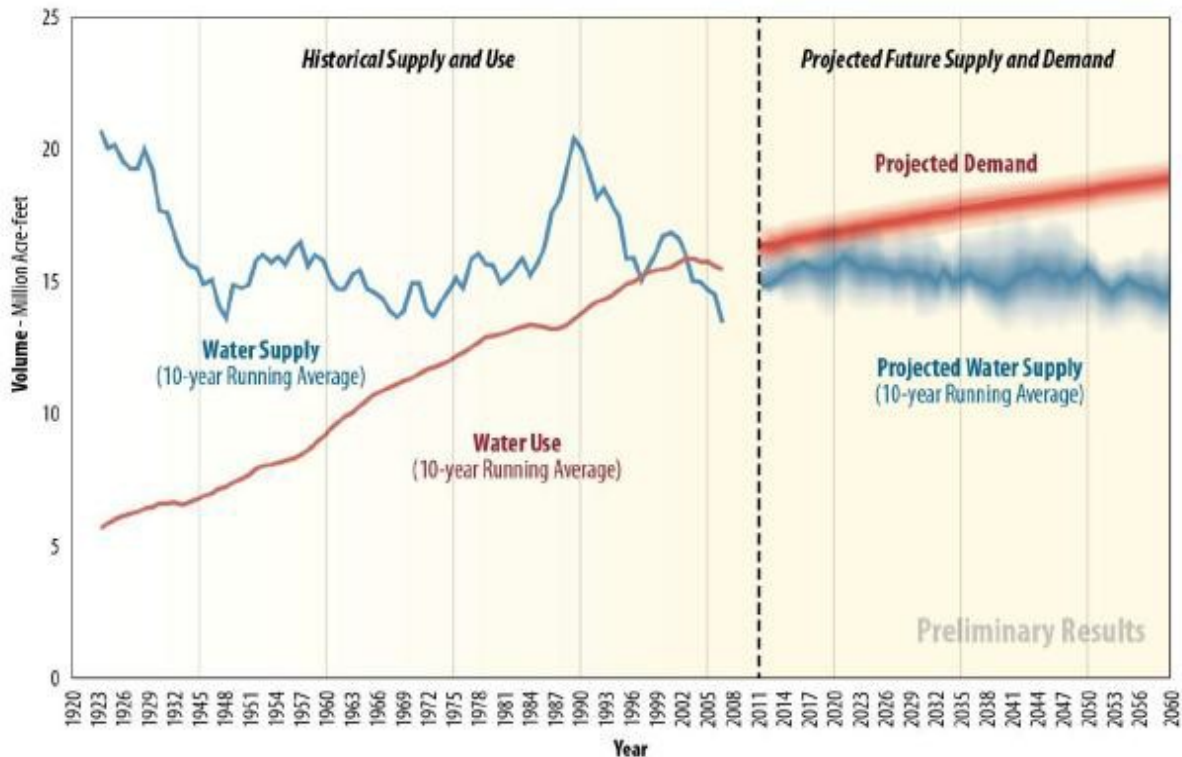
#### **UDWRe Response:**

**LPP Coalition Comment 13:**

**Water Demand already Outstrips Supply**

*In Figure 3 (below), the Bureau of Reclamation, depicts 10-year average supply and demand totals for the Colorado River basin, and illustrates that since 2002 demands have exceeded supply. This is nowhere more evident than in the declining volume of water in storage throughout the basin. The Project proponents must acknowledge that while new demands for Colorado River water may be supplied out of storage in the short term, the inevitable, long-term result is that a new demand in a system already fully used will either itself be shorted, or will result in a shortage to another water use somewhere else in the system.<sup>60</sup>*

**Figure 3. Historical and Projected Supply, Use, and Demand**



*The red line represents the water supply and the blue line represents water demand. Figure 3 illustrates clearly that a supply and demand imbalance currently exists in the Basin. This imbalance will grow in the future if major changes are not made in how we use water.*

<sup>60</sup> Doug Kenney, *Rethinking the future of the Colorado River*, Colorado River Governance initiative Dec 2010

**UDWRe Response:**

In order to meet future demand, a variety of strategies will need to be implemented. The LPP is just one of the strategies that will be used to meet future regional demand. Other strategies include further water conservation, treatment of water converted from agricultural to municipal, etc. Also, the graph represents potential demand with no supply constraints; therefore it is not representative of actual demand because of supply limitations. Additionally, some of these demands may be met by water imported from other basins through currently proposed projects. The purpose of the study from which the graph in the comment comes is to quantify the amount of additional supply needs beyond Colorado River allocations.

**LPP Coalition Comment 14:**

**Study Plan: Section 19.4.3 Issue and Data Needs**

- “Previous research into potential climate variability will be summarized relative to its effects on the proposed LPP diversion.
- The effects of the long-term drought affecting the Colorado River water supply will be assessed to determine the effects on the proposed LPP diversion.
- Requirements and stipulations for the proposed LPP diversions ... [to] be evaluated, including those described in the 1922 Colorado River Compact.”<sup>33</sup>

UBWR does not analyze how climate variability will affect the Project diversion in the Study Report. It includes climate change reports and references to the Downscaled General Circulation Model (GCM) model, but does not explain how these predictions of reductions from climate change will affect the physical water supply for the Project; or how rising temperatures will impact the Project diversion over the term of the license. Therefore, UBWR left out this vital environmental information in the Study Report and did not interpret the Study Plan provisions adequately. The Commission Staff must assure UBWR provides this critical information and sufficient evidence of their conclusion into the Study Report before the EIS analysis begins.

Further, UBWR did not provide this information pursuant to the Study Plan in the Study Report. The Study Report gives a brief summary of the Law of River and the 1922 Colorado River Compact, in (Chapter 2 .1, p.2-1) but is silent on the issue that UBWR water rights are junior in priority to the Colorado River Compact obligations to the Lower Basin at low reservoir levels. Consequently, the Study Report has insufficient detail for the Commission Staff to complete its environmental analysis in the EIS. UBWR did not evaluate how it will meet its obligations of the Colorado River Compact. It wrongly concludes it can still withdraw water for the Project in dire conditions. In our research, UBWR will not be able to pump water for the Project in dire conditions due to the fact that Utah’s Colorado River Compact water rights are only 23% of whatever is left after obligations to the Lower Basin and Mexico (8.23 million acre feet) are met at Lees Ferry.<sup>34</sup> Therefore, as the flows of the Colorado River diminish over time, Utah’s junior priority water right of 1957 for the Project will be subordinated to senior water rights holders that predate the Projects water right of 1957. Consequently, Utah will receive considerably less water from the Colorado River in the future.

For instance, the obligations having priority over the Project water rights include the following:

- *Water is 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.....”<sup>35</sup>*
- *Water is 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 ...”<sup>36</sup>*
- *Utah’s Compact water rights are only a percentage of what is left over after the above obligations are met. Utah’s water rights will be reduced over time because of a drying climate. The Upper Basin Compact of 1948 Article III. includes:<sup>37</sup>*
  - *“to provide for the equitable division and apportionment of the use of the waters of the Colorado River System, the use of which was apportioned in perpetuity to the Upper Basin by the Colorado River Compact;”*
  - *“to establish the obligations of each State of the Upper Division with respect to the deliveries of water required to be made at Lee Ferry by the Colorado River Compact;”*
  - *“apportionment for State of Utah, 23.00 percent;”*
  - *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.....”*
- *Additionally, there is a Resolution by the Upper Colorado River Commission that reads:*
  - *“Whereas, hydropower generated from Lake Powell provides stability for the Western Power Interconnection and funding for operation and maintenance of the primary (Colorado River Storage Project) CRSP Act units and for environmental and development programs throughout the Upper Basin;*
  - *Whereas, if the water elevations at Lake Powell reach minimum power pool levels, water supply and development for consumptive and non- consumptive uses in the Upper Basin and power supply options for the Western Area Power grid could be compromised.”<sup>38</sup>*

*Further, due to this Upper Colorado River Commission resolution a comprehensive plan of action should be available by December 2016. This Emergency Resolution should assure that the Upper Basin States will take measures to keep the level of Lake Powell above the minimum power pool elevation. For this reason, it is unlikely Utah will be able to ignore this goal and continue to pump from the second intake using junior priority water rights below this minimum power pool elevation. This is a significant issue that has to be included in the analysis of the Study Report.*

*Another issue that needs clarification in the Study Report is that it is not certain all states agreed to UBWR moving water from the Upper Basin to use in the Lower Basin where the Project is located and is mentioned in this resolution. A 2003 Resolution of the Upper Colorado River Commission explains the issue, stating:*

*“Whereas, the states of Colorado, New Mexico, Utah and Wyoming all support the proposed Lake Powell Pipeline project, but the states are not in agreement as to whether, under the Law of River, Utah may use a part of its Upper Basin apportionment to serve uses in the Lower Basin portion of Utah, without obtaining the consent of the other states. However in the spirit of comity, and without prejudice to the position of any state regarding these unresolved issues, all the states support and to the extent necessary consent to the Lake Powell Pipeline Project in Utah.”*<sup>39</sup>

*According to legal scholars UBWR cannot use an Upper Basin water right in the Lower Basin as this Project does and it could set a precedent.*<sup>40</sup>

*Also, Utah has over-appropriated water rights in the Upper Colorado River Basin. Consequently, water applicants with junior priority water rights should make a determination as to whether or not water will be physically available if undeveloped senior water rights are finally put to beneficial use. UBWR needs to provide this determination in the Study Report.*

*Also, there is an additional "upstream" aspect of the Law of the River that might affect the amount of water for the Project, particularly in times of drought. Under the Law of the River (the 1922 Colorado River Compact and the 1928 Boulder Canyon Dam Act), the Upper Basin states (Colorado, Wyoming, Utah and New Mexico) were allocated 7.5 MAF annually. Of this 7.5 MAF, 51.75% was allocated to Colorado, 23% to Utah, 14% to Wyoming and 11.25% to New Mexico. In times of shortage/drought, these percentages apply to any reductions. So in a dry year, Colorado still gets to take 51.75% of the water -- meaning there may not be that much left over for Utah and the other two Upper Basin states. Given that the State of Colorado is allocated the lion-share (51.75%) of the Upper Basin allocation, in times of drought, Utah is particularly vulnerable.*

*In addition, with less water now in the Colorado River and in the future, it is unclear how UBWR will handle pre-compact commitment to protecting the Tribes' reserved water rights. UBWR must provide evidence into record that shows proof it can meet its obligations under the various Compacts and resolutions, including the Tribal reserved water rights over the term of license.*

*Further, there are also federal Winters Doctrine reserved water rights of tribes in Arizona,<sup>41</sup> and how water must be released from Lake Powell to satisfy these Winters rights (which are above and beyond Arizona's Law of the River allocation). Therefore, the Winters obligations might affect the water available in Lake Powell for the Project and also need to be considered in the Study Report.*

*Further, FERC's Study Plan Criteria CFR 18 5.11 (d) (2) states that a plan should "address any known resource management goals of the agencies or Indian tribes with jurisdiction over the resources to be studied." Therefore, the Project's diversion and how it might impact Tribal reserved water rights in dire conditions must be analyzed in the Study Report.*

*Additionally, the Colorado River Basin Ten Tribes Partnership Tribal Water Study of the Colorado River is expected to be completed in December of 2016 (originally projected for completion in December of 2015).<sup>42</sup>*

*Tribal water rights trump States' 1922 Colorado River water rights and the Project's water rights. Tribal water rights are called, "present perfected rights" that pre-date the 1922 Compact. These Tribal rights in Utah were estimated in a recent BOR Colorado River Basin Water Supply and Demand Study to be diversion rights of 480,594 (AF) with depletion rights of 258,943 (AF).*

UBWR must include a discussion in the Study Report of how Utah's will handle agreements with the Indian Tribes with less water during the term of license. The Indian Tribes were not at the table in the Colorado River Compact, nor in any later Compacts, nor did the Compacts change any of their original rights. However, now the States have to settle with the Tribes that have reservations in that state and their water rights have to come out of the State's Compact water rights.

In 2003, Utah and the Navajo Nation executed a memorandum of agreement to pursue negotiations before litigation; they both agreed to an annual water right of 81,000 acre feet of water. Now the Utah State Legislature and the U.S. Department of Interior and Congress have to approve the agreement to also pay the Tribe \$200 million; Utah may chip in \$8 million. The Ute Tribe also has Colorado River water rights that have yet to be finalized by all the parties and the State of Utah. These rights also have to come out of Utah's portion of its remaining share of Colorado River Compact water rights (see Figure 2. below).

Therefore, in a water shortage, Tribal rights will not be reduced. Consequently, the Project's junior priority water rights are more vulnerable in a shortage. The priority date for the Project's water rights is 1957 when the Flaming Gorge reservoir and Central Utah Project were approved. The Central Utah Project also has priority over the Project's water rights. This means that all water rights granted prior to 1957 plus compact obligations have a higher priority than the Project's water rights.

**Figure 2. Utah's Remaining Colorado River Compact Water Rights**

Utah's planned projects Colorado River	Utah's Total Allocation 1.369 MAFY 1.008 MAFY used
<i>Ute Tribe Reserved Water</i>	105,000 (AF)
<i>Navajo Nation Reserved Water</i>	81,000 (AF)
Lake Powell Pipeline	86,000 (AF)
New Ag uses	40,000 (AF)
New M & I Uses	29,000 (AF)
Total new planned projects	341,000 (AF)

As Figure 2 illustrates, Utah assumes it has 341,000 (AF) of water from its remaining share of the Colorado River, but it does not consider this remaining share could be reduced in the future.

The important issues listed above are not included in the Study Report and need to be. The Commission Staff should assure UBWR provides a full and fair discussion of these issues to accurately inform decision makers about the feasibility of the Project as a permanent water project over the term of license.

<sup>33</sup> Ibid.

<sup>34</sup> The 1922 Colorado River Compact, See at: <https://www.usbr.gov/lc/region/pao/pdfiles/crcompact.pdf>.

<sup>35</sup> Ibid. Article III (c).

<sup>36</sup> Ibid. Article III (d).

<sup>37</sup> Upper Basin Compact 1948, See at: <https://www.usbr.gov/lc/region/pao/pdfiles/ucbsnact.pdf> (emphasis added)



<sup>38</sup> Resolution by the Upper Colorado River Commission, “Development of an Emergency Upper Basin Contingency Plan.” (Dec. 10, 2014). See at: <http://citizensfordixie.org/wp-content/uploads/2015/12/Upper-Basin-Resolution-Emergency-Drought-2014.pdf>

<sup>39</sup> Resolution of the Upper Colorado River Commission, 2003, See at: <http://www.riversimulator.org/Resources/LawOfTheRiver/HooverDamDocs/Supplements/2003aUCRCRe solutionUseAccountingWaterLakePowellPipeline.pdf> (emphasis added)..

<sup>40</sup> James S. Lochhead, An Upper Basin Perspective on the California’s Claims to Water from the Colorado River Part 1: the Law of the River, pp.322-329, See at: <http://citizensfordixie.org/wp-content/uploads/2015/12/Lochhead-An-Upper-Basin-Perspective.pdf>

<sup>41</sup> Kenneth E. Foster, The Winters Doctrine: Historical Perspective and Future application of Reserved Water Rights in Arizona. See at: <https://info.ngwa.org/GWOL/pdf/781500880.PDF>

<sup>42</sup> Ten Tribes Partnership, See at: <http://www.riversimulator.org/Resources/Tribes/ColoradoRiverBasinTribalWaterStudyPlanOfStudy.pdf>.

#### **UDWRe Response:**

**The BOR basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report.**

**Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections. The higher priority out-of-state allocations are already in full use, and have minimal impact on Utah’s allocation.**

**Your comment is noted. The drought contingency plans are in the development phase and will be implemented when completed by all of the basin states. It is premature to assume the content of those plans.**

**Arizona has been made aware of the proposed project, and will be coordinated with throughout this process; however, the Upper Colorado River Compact, of which Arizona is a signatory, requires all participants to facilitate use of a state’s own allocation.**

**Tribes have been and will continue to be consulted with throughout this process.**

#### **LPP Coalition Comment 15:**

##### **Study Plan: Section 19.5 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.”<sup>32</sup>*

*Water availability for the Project has been a key issue since 2008, and yet a much-needed objective analysis is still not included in the Study Report. The Study Report results that claim water availability is not an issue for the Project because they can pump water for the Project in dire conditions is not substantiated by facts in the record. UBWR must detail the supply availability over the term of the license as required in the Study Plan since it is the Project’s*



*purpose. The Commission Staff must assure that the environmental studies are not based on faulty assumptions.*

<sup>32</sup> Study Plan No.19, p. 219, (emphasis added)

**UDWRe Response:**

**Your comment is noted. Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections.**

**Executive Summary Comments:**

**LPP Coalition Comment 1:**

*(Section ES.1, Page ES-3)*

**Introduction**

*“The Lake Powell Pipeline Hydrologic Modeling report (Reclamation 2015) compared scenarios with and without the LPP for each of two hydrologic datasets, observed hydrologic record (DNF) and the alternate, more variable, climate change inflows (CC).”<sup>49</sup>*

*The “Climate Change (CC) Inflow Hydrology – This future inflow hydrology scenario uses climate change projections used in the 2012 Basin Study.” (Section 4.1, Page 4-1)*

*However, none of models used by UBWR were adequate in assessing climate change impacts on water availability for the Project. All of models use 15 MAFY at Lees Ferry, which over estimates the flow of river in the future. The Study Report explains UBWR used the Colorado River Simulation System (CRSS) model to assess climate change impacts although the model is not affected by climate change. Also, UBWR used the Direct Natural Flow, Index Sequential Method (DNF) model that uses only 100 year average of 15 MAFY, which doesn’t include reductions due to climate change. Further, UBWR used a Climate Change Inflow Hydrology model (CC) that held depletions in the Upper Basin to 2015 levels. In addition, UBWR did an analysis of the potential effects of the Lake Powell Pipeline project under the 2007 Interim Guidelines EIS that were evaluated for only three years, the first three years of the pipeline when the project is coming on line and pipeline depletions are lower. Therefore, UBWR did not gather the right data. It should have used the best available model on climate change which is the Downscaled General Circulation Model (GCM) climate model for the analysis in the Study Report found in Colorado River Basin Water Supply and Demand Study, Technical report B.<sup>50</sup>*

<sup>49</sup> PLP Study Report, p. ES-3

<sup>50</sup> Colorado River Basin Water Supply & Demand Study, Final Study Report 2012, Technical Report B – page S-4

**UDWRe Response:**

**The comment is noted. Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account.**

Therefore, the impact of the project is not in addition to, but rather already included, in those projections.

The demand schedule used in CRSS includes future development of the Upper Basin Colorado River allocation, including The Lake Powell Pipeline. Multiple GSM models show different flows, some on the high and some on the low flow end. A mid-level GSM flow was used for the basin study. Given the various GSM projections, using a mid-level flow projection is reasonable. The recent drought cycle has shown the system's sustainability and resiliency through drought conditions.

**LPP Coalition Comment 2:**

(Section ES.1, Page ES-3)

**Introduction**

*"The majority of the studies predict future inflow into Lake Powell is likely to decline because of climate change or natural reversion back to the long-term historical mean observed in the tree-ring studies (Reclamation 2015). Reduced inflow to Lake Powell could have detrimental effects on storage levels if more stringent shortage and demand management strategies than included in the Interim Guidelines EIS are not implemented. It is unknown at this time what impacts such management strategies might have on the State of Utah or the LPP Project. There are currently no plans to curtail Upper Basin States' water use beyond what is required by the Colorado River Compact."*<sup>46</sup>

*We disagree with UBWR's assumptions that it is unknown what management strategies might have to be taken by the State as future water supplies are reduced over the term of license. All the scientific studies confirm there will be less water from the Colorado River in the future due to rising temperatures. Therefore, a simple scenario could be developed to define when Utah could no longer divert water for the Project's using junior priority water rights at different reservoir levels. As we describe in our comments. Utah's Colorado River Compact water rights are only a percentage of what is left over after other senior water rights of the Lower Basin Compact obligations are met. Therefore, decision makers should also be made aware that Utah will only get twenty-three percent of whatever water remains in the Upper Basin. It is not a fixed amount like the Lower Basin's Colorado River Compact water rights.*

*We detail in our comments Utah's obligations under the Colorado River Compact and the management strategies it imposes on the Project. Also, the Upper Basin States are developing an action plan to prevent Lake Powell from falling below the minimum power pool elevation. Therefore, there are management strategies that govern the operation of the Project and they should be disclosed in the Study Report.*

<sup>46</sup> Study Report 19, Executive Summary, p. ES-3, (emphasis added)

**UDWR Response:**

**Your comment is noted. The drought contingency plans are in the development phase and will be implemented when completed by all of the basin states. It is premature to assume the content of those plans.**

**Lisa Rutherford and Paul Van Dam Comment 88:**

## 2015 Revised Draft Study Plan 19 – Climate Change

### **Executive Summary**

#### **ES.1 Introduction** (Page ES-3)

*The majority of the studies predict future inflow into Lake Powell is likely to decline because of climate change or natural reversion back to the long-term historical mean observed in the tree-ring studies (Reclamation 2015). Reduced inflow to Lake Powell could have detrimental effects on storage levels if more stringent shortage and demand management strategies than included in the Interim Guidelines EIS are not implemented. It is unknown at this time what impacts such management strategies might have on the State of Utah or the LPP Project. There are currently no plans to curtail Upper Basin States' water use beyond what is required by the Colorado River Compact.*

#### **COMMENT**

*If the very possible detrimental effects of reduced inflow to Lake Powell – effects that would also be detrimental to LPP – are dependent on shortage and demand management strategies and Utah's rights are junior to Lower Basin, why would we be relying on this source with our tax dollars? Utah's 23% of CR flow will be predicated on what's available and what's left after meeting Lower Basin obligations. Applicant's ES introduction seems to provide more warning and reason for FERC to deny the license than to approve it.*

#### **UDWRe Response:**

**The CRSS model analysis has been modified to include hydrologies based on climate change projections and Appendix 2 has been updated and the corresponding analysis in the text of Study Report 18 has been modified.**

### **Chapter 1 Comments:**

#### **LPP Coalition Comment 1:**

*(Sections 1.1 and 1.2, Page 1-1)*

#### **1.1 Introduction**

*“This document reviews studies of hydrologic extensions for the Colorado River near Lake Powell, and identifies their potential impact on LPP Project reliability.”<sup>44</sup>*

#### **1.2 Methodology**

*“No new river system modeling or analysis was performed as part of this review.”<sup>45</sup>*

*However, the Study Report does not discuss the potential impact of climate change to the Project's reliability adequately. We detail in our comments that this is a significant issue and deserves more analysis in this Study Report before the EIS process begins.*

<sup>44</sup> Study Report Introduction, p. 1-1, (emphasis added)

<sup>45</sup> Study Report, p.1-1.

#### **UDWRe Response:**

The ability to supply water for the pipeline is evaluated with the CRSS model and shown in results titled “Powell Pool Elevations.” Results titled “Powell Releases” give the reader insight to effects in the Colorado River downstream of Lake Powell. The CC datasets used in the CRSS were developed using downscaled GCM model output. The number of hydrologic datasets evaluated with the CRSS model gives such a wide range of possibilities that the reliability of the project should be inferred from the model results.

## **Chapter 2 Comments:**

### **Kaibab Tribe Comment 1:**

*(Section 2.1)*

*The UBWR briefly summarizes the "Law of the River," including the 1922 Colorado River Compact, a 1944 treaty with Mexico, and the 1948 Upper Colorado River Basin Compact, Revised Draft Study Report 19 at 2-1, but it does not discuss the application of this law to Indian tribes. The UBWR should mention that Article VII of the 1922 Colorado River Compact ensures that "[n]othing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes."*

### **UDWRe Response:**

The text has been modified in Section 2.1 to include “Article VII of the 1922 Colorado River Compact ensures that “[n]othing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.” Therefore, in a water shortage, Tribal rights will not be reduced.”

### **Lisa Rutherford and Paul Van Dam Comment 92:**

*Chapter 2 Colorado River Water Distributions*

#### **2.3 Interim Guidelines EIS Hydrology (Page 2-3)**

*When comparing the four hydrologic inflows to the likelihood of being below the minimum power pool elevation (3490 feet MSL) for Lake Powell, the DNF shows nearly no chance of falling below, where the NPC indicates the highest likelihood of occurrence at 26 percent after 2055. The highest probability of shortage for lower Basin states and Mexico would occur after 2055, where the DP simulates an 80 percent chance of shortages; DNF, 69 percent; and NPC 62 percent (Reclamation 2007, Appendix N, Attachment A).*

#### **COMMENT**

*The LPP payback model being communicated so far shows a 50-90 year payback period for loans to construct the LPP. With the hydrology and flows projections above, and Lower Basin states and Mexico facing shortages of 62-80% after 2055, and the river’s management of those challenges unknown at this point, why would we want to commit our money and future to this project?*

### **UDWRe Response:**

A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the

project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBRW contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

### **Chapter 3 Comments:**

#### **LPP Coalition Comment 1:**

*(Section 3.1, Page 3-1)*

#### **Literature Review – Introduction**

*“Under most drought scenarios, the most secure water rights are from reservoirs at the downstream end of river system.”<sup>29</sup>*

*UBRW’s very general and broad statement in the Study Report that their water right is the most secure because it is at the “end of river system” is not based on facts in the record—there is nothing secure about this water right that is junior to all water rights established before 1957. This is very a misleading statement and UBRW did not perform an adequate supporting analysis in the Study Report. The Study Report results claiming that their water right is secure at low reservoir levels is not a true statement as the Project’s water rights are junior to the Upper Basin Compact obligations to the Lower Basin and at risk in conditions of shortage.*

*We detail in our following comments the reason this claim is not legitimate. The Commission Staff must assure these statements of the UBRW are not mere opinion and are scientifically valid before the EIS process begins. This is a significant issue that needs to be analyzed for its accuracy, or be deleted from the Study Report.*

<sup>29</sup> Study Report No. 19, p. 3-1, *(emphasis added)*

#### **UDWRe Response:**

**Your comment has been noted. The higher priority out-of-state allocations are already in full use, and have minimal impact on Utah’s allocation.**

**Text has been deleted in Section 3.1 “Under most drought scenarios, the most secure water rights are from reservoirs at the downstream end of river system. In the Colorado River, water shortages are likely to occur first on the senior water rights high in the river system.”**

#### **Lisa Rutherford and Paul Van Dam Comment 89:**

*Chapter 3 Literature Review*

#### **3.4 Other Climate Change Studies (Page 3-13)**

*Under these scenarios, Colorado River demand for consumptive uses is projected to range between about 18.1 MAF under the Slow Growth (B) scenario and about 20.4 MAF under the Rapid Growth (C1) scenario by 2060. The largest increase in demand is projected to be in the M&I category, resulting from population growth.*

## COMMENT

*With CR flows currently far below the 21MAF upon which the 1922 Compact decisions were based, and below the 15 MAF frequently mentioned, demand for 18.1 MAF to 20.4 MAF is reason for great concern. Will Utah's junior rights and the 23% of "available" water allow the LPP to provide the water to Southern Utah that proponents assert?*

## UDWRe Response:

**The higher priority out-of-state allocations are already in full use, and have minimal impact on Utah's allocation. The demand schedules in the basin study reflect the unconstrained potential demand with unfettered supply and do not reflect water-limited demand. Demand is not expected to be met by Colorado River supply alone. The purpose of the basin study was to quantify demands which could not be met by the Colorado River Supply.**

## Chapter 4 Comments:

### LPP Coalition Comment 14:

*(Section 4.1.1, Page 4-4)*

#### **Probability of Not Exceeding Minimum Power Pool Elevation in March, DNF Inflow Hydrology**

*"Overall, the probability of not exceeding Lake Powell's minimum power pool (3,490 feet) in March is higher in the CC inflow scenario compared to the DNF inflow scenario (Figure 4-4). In addition, differences between the action and no action alternatives for the CC inflows occur more frequently than did for the DNF inflows. The action alternative results in slightly higher probabilities (0.9 percent to 2.7percent higher) of Lake Powell being below minimum power pool in 19 of the 46 years simulated. Source: Reclamation (2015)"<sup>61</sup>*

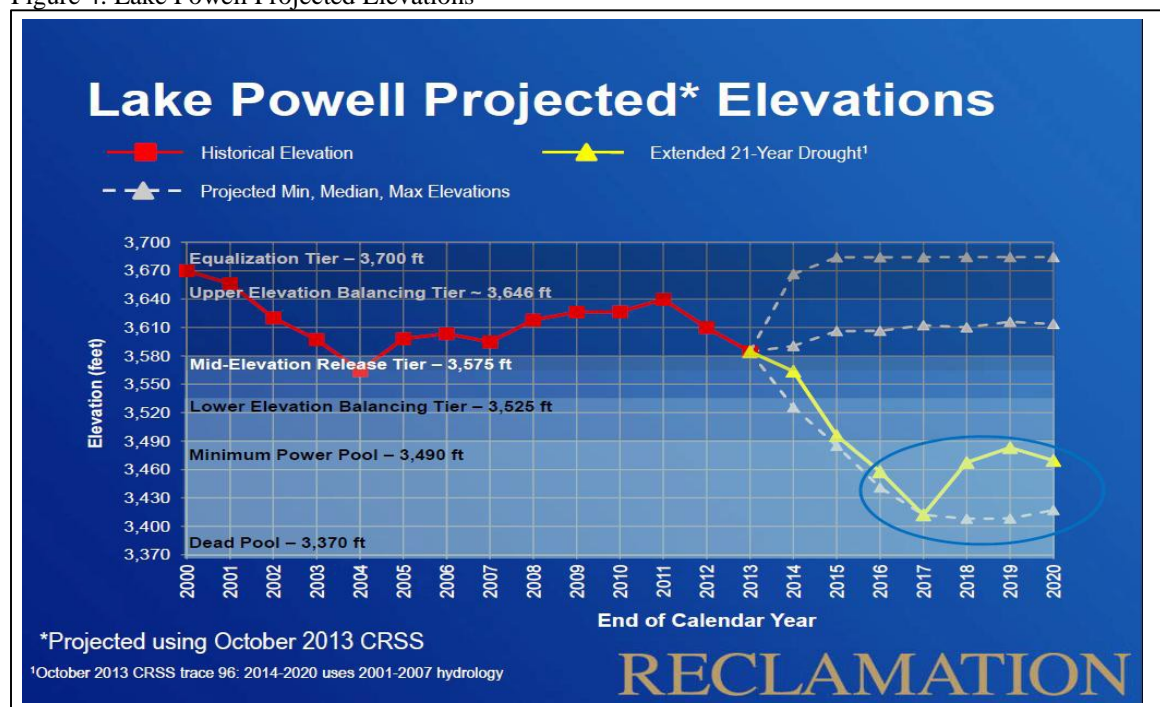
*We described in our comments that the DNF model only considered 100 year average at 15 MAFY a year at Lees Ferry and the CC model holds depletions in the Upper Basin to current levels therefore, the models do not consider climate change impacts on water deliveries for the Project. Therefore, the conclusion that the models "indicate the proposed pipeline would have little or no affect on the ability to generate power at Glen Canyon power plant" are not legitimate, nor based the current best available science of the GCM model that includes climate change and rising temperatures.*

*On the contrary, a Bureau of Reclamation chart, Figure 4 (below), shows that if the drought continues from a fifteen year to a twenty-one year drought, the elevation of Lake Powell could fall below the minimum power pool level.*

*Further, in the Revised Draft Socioeconomics Water Resource Economics Study Report, it state: "the LPP Project impacts on power generation from Glen Canyon Dam releases would be measurable, projected to be \$58,401,000 in forgone power generation revenue (present value 2010\$)....."<sup>62</sup> This loss of power revenues reveal there is a significant impact from the Project's withdrawals on Lake Powell levels. However, UBWR did not do an analysis using lower lake elevations in dire conditions.*



Figure 4. Lake Powell Projected Elevations



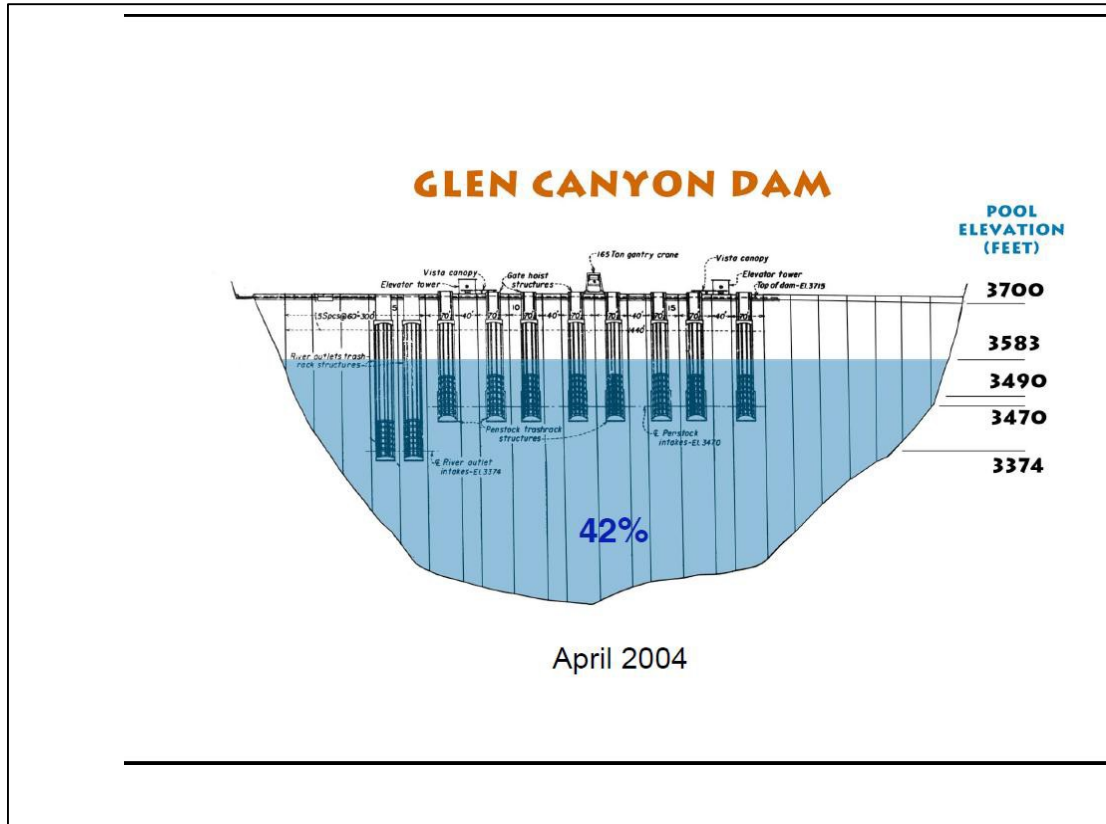
*These illustrations below of the penstocks show the elevation of Lake Powell and how much water covers the penstocks.*

*The level of the Lake Powell has an impact on the amount of power that will be generated, as water levels in the lake decrease less power will be being produced. Therefore the issue is not only if the reservoir level goes below the minimum power pool elevation, but what impact the Project will have on reduction of kilowatts produced at the lower proposed intake levels.*

*Figure 5. Glen Canyon Dam Penstocks at 42% Capacity<sup>63</sup>*



Figure 5 illustrates the Project's first intake at 3574 msl. When Lake Powell is at 42% capacity the water covers half of penstocks.



**Figure 6. Glen Canyon Dam Penstocks at Minimum Power Pool 3490 msl**

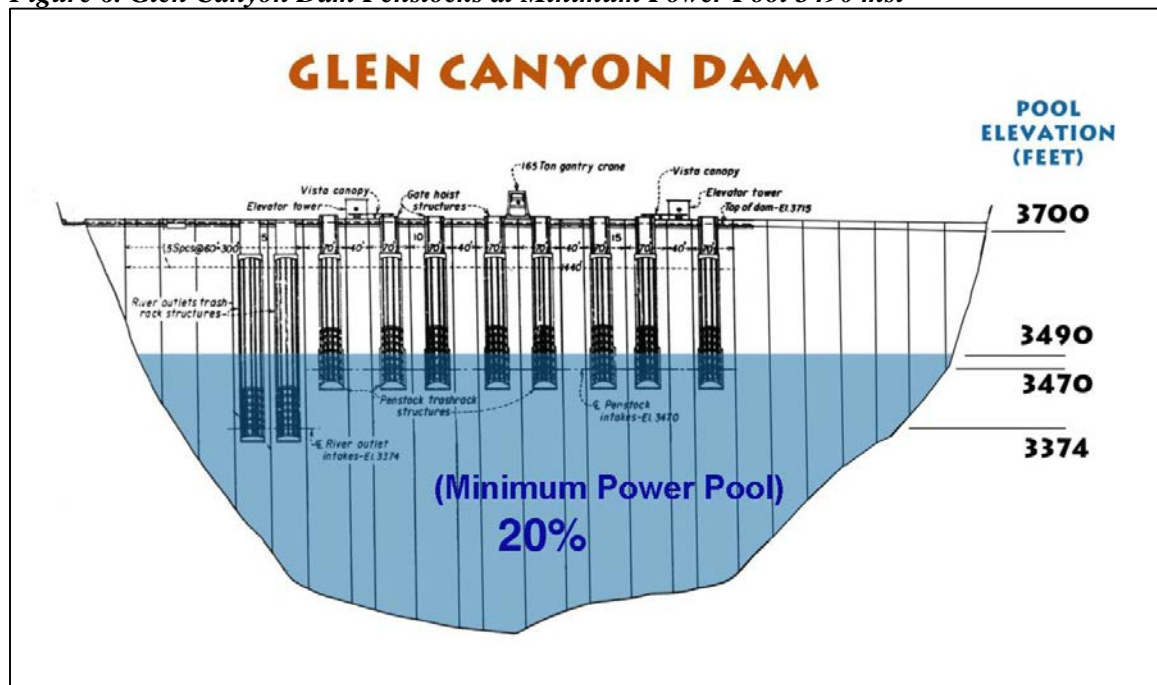
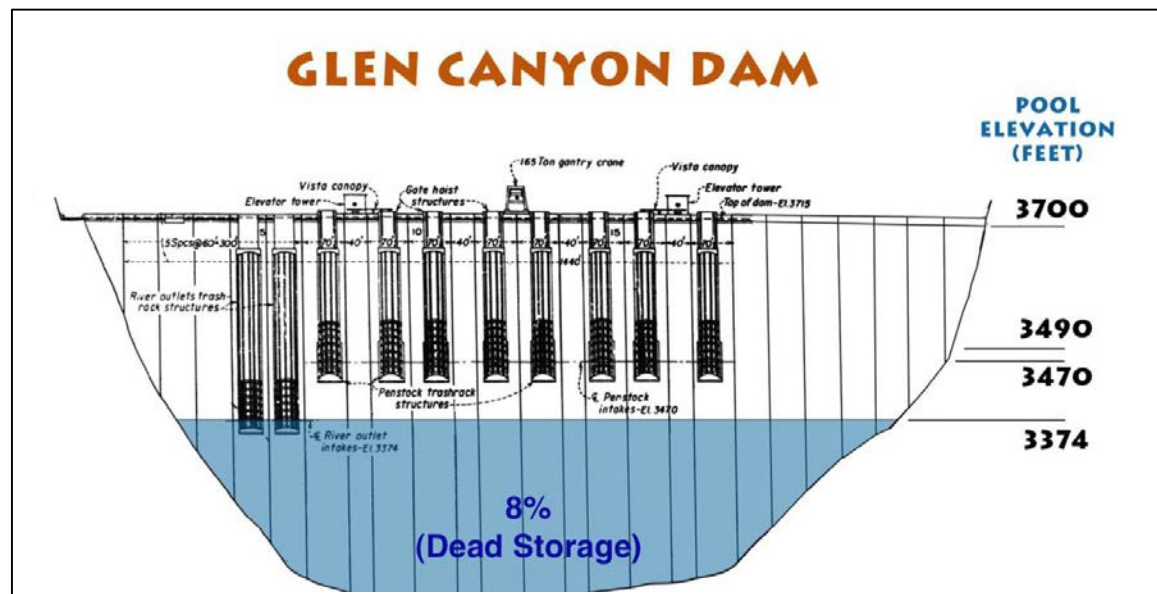


Figure 6 illustrates the minimum power pool elevation in Lake Powell at 3490 feet msl.

The Project's second intake is at 3474 msl in Lake Powell, which is 16 ft. below minimum power pool elevation in Lake Powell.

**Figure 7. Glen Canyon Dam Penstocks at Dead Pool**

The third intake is at 3375 msl, which is 5 feet above dead pool in Lake Powell.



*“Dead Pool is the term used to describe inactive water storage behind Glen Canyon Dam. About 2 MAF of Powell’s 26 MAF storage capacity is considered “dead storage” because the dam currently has no means to release it. During construction of the dam, the river bypass tunnels were filled with reinforced concrete, thus prohibiting any releases from the dam once reservoir elevations dipped below the 237 foot River Outlet Works.” See at: <http://www.glencanyon.org/about/faq>.*

<sup>61</sup> PLP Study Report, Figure 4-3, p.4-4.

<sup>62</sup> PLP, Study Report No, 10, Chapter 11, Cumulative Impacts, p.11-1

<sup>63</sup> Graphics of Penstocks from: See at:

<http://www.onthecolorado.com/resources.cfm?mode=section&id=Graphics>

#### **UDWRe Response:**

**The comment is noted. Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All BOR studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included in, those projections.**

#### **LPP Coalition Comment 3:**

*(Secition 4.1.3, Pages 4-4 to 4-6)*

#### **CRSS Model Summary**

*“The results from these hydrologic model runs should be interpreted with consideration to the model assumptions. Unique to this analysis is the model assumption that no new projects or depletions will occur in the Upper Basin. This model assumption adopts a rigorous definition of what reasonably foreseeable future depletions are in the Upper Basin and is consistent with DOI NEPA Implementing Regulations. Under this approach, a reasonably foreseeable future depletion is one which has state legislation, or a tribal resolution or Federal Indian water settlement, or a Federal finding of no significant impact (FONSI) or record of decision (ROD). These are the criteria of certainty that a future depletion would occur at a particular time and place. This is a conservative approach to modeling the alternatives and takes the strictest approach to defining what is included and excluded for the cumulative impact analysis required by the Council on Environmental Quality’s regulations 40 CFR 1508.7.4. It is recognized that the Upper Basin States plan to develop their Compact allocated Colorado River water and, as such, it is highly unlikely that depletions will remain at the 2015 level in the future. It should also be noted that the modeling effect of holding most Upper Basin depletions constant at 2015 levels results in depletions significantly lower than the future long-term depletion projections provided by the Upper Basin States which assume that Upper Basin depletions will grow through 2060.”<sup>54</sup>*

*UBWR using the Colorado River Simulated System (CRSS) model, as a definition for reasonably foreseeable future depletions in the Upper Basin is flawed because they kept the Upper Basin depletions constant at 2015 levels. We disagree with using the CRSS model results because the model did not include climate change impacts on water deliveries to the Project.*

*We describe in comments the reasons the CRSS model, is flawed and cannot be used as rigorous definition of reasonable and foreseeable:*

- The model kept Upper Basin depletions constant at 2015 levels.
- The model does not include the Colorado River Compact allocations; UBWR did not evaluate how it will meet its obligations of the Colorado River Compact in dire conditions.
- The model does not include climate change impacts to water availability for the Project.

*Projects that should be added as reasonable and foreseeable are:*

- *Within the term of license, there will be by December 2016 (Contingency Planning) and the review of 2007 Interim Guidelines, which begins in year 2020 or sooner as needed according to the ROD<sup>55</sup>*
- *Drought Contingency planning that the seven states must complete by the next Colorado River Water Users Association meeting in December of 2016. If the deadline is not met the Department of Interior would complete the contingency planning without the states.*
- *The Colorado River Basin Ten Tribes Partnership Tribal Water Study is expected to be completed in December of 2016 (originally projected for completion in December of 2015).<sup>56</sup>*
- *The 2014 Upper Basin Emergency resolution to protect Lake Powell from falling below minimum power pool elevation.*
- *Moffat Collection System Project - 18,000 acre feet. FEIS issued, waiting for ROD. In Colorado.*
- *Windy Gap Firming Project - 30,000 acre feet. FEIS issued, waiting for ROD. In Colorado.*
- *Northern Integrated Supply Project - 40,000 acre feet. SDEIS issued. May use Colorado River water. In Colorado.*
- *Fontenelle Dam Re-Engineering - 123,000 acre feet. EIS process not yet began. In Wyoming.*
- *The Green River Nuclear Power Plant, 50,000 acre feet in UT,*
- *Navajo water rights transfers in UT have claimed 86,000 acre feet of UT's share.*

<sup>55</sup> See at: <http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf>

<sup>56</sup> <http://www.riversimulator.org/Resources/Tribes/ColoradoRiverBasinTribalWaterStudyPlanOfStudy.pdf>

#### **UDWRe Response:**

**The demand schedule used in CRSS includes future development of the Upper Basin Colorado River allocation, including The Lake Powell Pipeline. Multiple GSM models show different flows, some on the high and some on the low flow end. A mid-level GSM flow was used for the basin study. Given the various GSM projections, using a mid-level flow projection is reasonable. The recent drought cycle has shown the system's sustainability and resiliency through drought conditions.**

#### **LPP Coalition Comment 4:**

*(Section 4.1.3, Pages 4-4 to 4-6)*

#### **CRSS Model Summary**

*“The results from these hydrologic model runs should be interpreted with consideration to the model assumptions. Unique to this analysis is the model assumption that no new projects or depletions will occur in the Upper Basin.*

*It is recognized that the Upper Basin States plan to develop their compact allocated Colorado River water and, as such, it is highly unlikely that depletions will remain at the 2015 level in the future.*<sup>51</sup>

*“Thus, for this analysis the potential effects of the Lake Powell Pipeline project under the Interim Guidelines are evaluated for only three years, the first three years of the pipeline when the project is coming on line and pipeline depletions are lower.”*<sup>52</sup>

*The models used by UBWR the Colorado River Simulated System (CRSS) model and the Direct Natural Flow, Index Sequential Model (DNF) did not consider climate change. This fact is explained in the Bureau of Reclamation’s Colorado River Basin Water Supply and Demand Study, Technical report B, water supply assessment. It states:*

*“In 2004 Reclamation initiated a multi-faceted research and development program too enable the use of methods beyond those that use the observed record for projecting possible future inflow sequences for Basin planning studies. Through this effort, two additional water supply scenarios were developed and have been used in previous Basin planning studies, these scenarios assume that characteristics of the water supply critical uncertainties are represented by the observed and paleo-reconstructed stream flow records. Those scenarios, Paleo Resampled and Paleo Conditioned, have most recently been published in appendix N the Colorado river Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead EIS, 2007. For the purposes of the study, it was determined that these previously used scenarios did not provide a sufficiently broad range of plausible futures because they did not include the consideration of changing climate beyond what has occurred in history. For this reason a fourth scenario was developed that assumes the characteristics of the critical uncertainties Changes in Stream flow Variability, and trends, and Changes in Climate Variability and Trends are indicated by Downscaled General Circulation Model (GCM) projections and simulated hydrology.”*<sup>53</sup>

<sup>51</sup> PLP Study Report, p.4.6, (emphasis added).

<sup>52</sup> Ibid. p, 4-7.

<sup>53</sup> Colorado River Basin Water Supply & Demand Study, Final Study Report 2012, Technical Report B, p. S-4. See at: <http://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html>

#### **UDWRe Response:**

**The comment is noted. Bureau of Reclamation studies show that there is sufficient supply to meet the LPP allocation. All Reclamation studies take the LPP allocation into account. Therefore, the impact of the project is not in addition to, but rather already included, in those projections. The Reclamation basin study, which the LPP documents use extensively, provide climate change scenarios. Details on this analysis can be found in the Climate Change Study Report. The demand schedule used in CRSS includes future development of the Upper Basin Colorado River allocation, including The Lake Powell Pipeline. Multiple GSM models show different flows, some on the high and some on the low flow end. A mid-level GSM flow was used for the basin study. Given the various GSM projections, using a mid-level flow projection is reasonable. The recent drought cycle has shown the system’s sustainability and resiliency through drought conditions.**



The text in Section 4.1.3. has been modified to read “Thus, for this analysis, the potential effects of the Lake Powell Pipeline project utilize the Interim Guidelines for only three years, the first three years of the pipeline when the project is coming on line and pipeline depletions are lower.”

**LPP Coalition Comment 5:**

(Section 4.1.3, Pages 4-4 to 4-6)

**CRSS Model Summary**

*“The results from these hydrologic model runs should be interpreted with consideration to the model assumptions. Unique to this analysis is the model assumption that no new projects or depletions will occur in the Upper Basin.*

*It is recognized that the Upper Basin States plan to develop their compact allocated Colorado River water and, as such, it is highly unlikely that depletions will remain at the 2015 level in the future.”<sup>51</sup>*

*“Thus, for this analysis the potential effects of the Lake Powell Pipeline project under the Interim Guidelines are evaluated for only three years, the first three years of the pipeline when the project is coming on line and pipeline depletions are lower.”<sup>52</sup>*

*In the Study Report UBRW refers to Downscaled General Circulation Model (GCM), but did not include the results of the (GCM) or analyze how climate change would affect the water supply for the Project. The major results of the GCM model are left out of the Study Report. The Downscaled GCM model results project flows in the future at Lees Ferry to be only 13.6 MAFY rather than current assumptions in the CRSS models that use 15 MAFY. The GCM model also projects flows at Lees Ferry could be reduced by 9%. Therefore, if you subtract 9% from Utah’s existing water rights, the Projects junior priority water rights would be subordinated to senior water rights holders. However, UBRW did not use results of the best available science--the GCM model to analyze water availability for the Project.*

*The other Colorado River Simulated System (CRSS) model runs used to assess water availability do not consider the reduction in flows that are already occurring and will occur in the future, and this is a fatal flaw in the Climate Change Study Report No. 19 results. UBRW misinterpreted the CRSS model because the model does not include all Colorado River Compact water rights, other water rights, or non-federal project operations. It is a flow model to keep track of what flows into the system and what flows out of the system. The CRSS does represent the operations of Lake Powell and Lake Mead. Further, the CRSS model uses 15 MAFY that is unaffected by climate change at Lees Ferry overestimating the flow, which has been much lower since the year 2000 at only 12.5 MAFY.*

*In order for the Study Reports to be complete for the EIS, UBRW must consider the over allocation of the Colorado River and the fact that water demand already outstrips supply. The Commission must require UBRW to prove that the physical water supply is available for the Project for the term of license. UBRW’s analysis must look at the system as a whole and what the status of river flow would be if all Upper Basin Colorado River Compact water rights are developed.*

*The BOR using 15 MAFY to make water management decisions over-estimates the flow. The same problem of over-allocation of the river is continuing as new diversions are being approved by Utah and the BOR. The Colorado River Simulated System (CRSS) river model used to assess the impact of the Project is overly optimistic by projecting that reservoir and river flows will still be as robust in the future as they have been in the past. Bureau of Reclamation's CRSS studies have used this higher estimated flow of 15 MAFY for its 100 year average (1906-2010) of the river's natural flow at Lees Ferry below Glen Canyon Dam. Assuming flows of 15 MAFY to assess environmental impacts of the Project is flawed by assuming that the past will predict the future. Yet, due to the fifteen year drought the actual flows are nearer to 12.5 MAFY. Then, for a different section of time the BOR stated flows in the years 2000-2009 were only 11 MAFY, the lowest ten year average in over 100 years of record keeping on the Colorado River.*

<sup>52</sup> *Ibid.* p, 4-7.

#### **UDWR Response:**

**The demand schedule used in CRSS includes future development of the Upper Basin Colorado River allocation, including The Lake Powell Pipeline. Multiple GCM models show different flows, some on the high and some on the low flow end. A mid-level GCM flow was used for the basin study. Given the various GCM projections, using a mid-level flow projection is reasonable. The recent drought cycle has shown the system's sustainability and resiliency through drought conditions.**

#### **Chapter 5 Comments:**

##### **LPP Coalition Comment 1:**

##### **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."*<sup>30</sup>

*UBWR has not put evidence into the record of how they come to the conclusion that they will be able to divert water at such low reservoir levels. We detail how Upper Basin States' obligations to Lower Basin States in the 1922 Colorado River Compact have priority over the Project's junior priority water right of 1957 at low reservoir levels.*

*The Commission Staff must require accurate information be put into the Study Report record before the EIS process begins which clearly supports UBWR's claim. If UBWR does not provide evidence of this claim it should be deleted from the Study Report.*

*The facts do not support that UBWR would be able to pump water for the Project in low storage conditions in Lake Powell. For instance, the Pipeline intakes are proposed at three elevations. We use those elevations and the amount of storage at each level in Lake Powell to illustrate the problem with UBWR's assumption. The first intake is proposed at 3575 mean sea level (msl) with an active storage of 9.52 million acre feet (MAF) stored in Lake Powell. The minimum power pool elevation level is 3490 msl. The elevation level of the second intake is proposed at 3475 msl which is 16 feet below minimum power pool elevation with an active storage in Lake Powell at*



*below 5.93 MAF. Therefore, at this level of storage in Lake Powell the water is all committed to senior water rights holders which are the Lower Basin states. The Upper Basin states deliver to the Lower Basin States 7.50 MAF a year, at Lees Ferry. (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.) The third intake is proposed at 3375 msl in which there is zero active storage in Lake Powell near dead pool.<sup>31</sup> Therefore, UBWR must describe in the Study Report the conditions of reservoir storage that allows them to continue to pump water in low storage using a junior water right. Also, UBWR must explain how their junior water rights takes priority over other senior water rights holders if there is only 5.93 MAF of storage at the second intake level and then no active storage in Lake Powell at the third intake level.*

*We understand the lower basin commitment is technically a rolling ten-year average rather than a specific annual amount. However, the Commission Staff should require UBWR to demonstrate availability through climate change modeling if their water right would be available at the proposed intake levels.*

<sup>30</sup> Study Report, p. 5-1, (emphasis added).

<sup>31</sup> “Dead Pool is the term used to describe inactive water storage behind Glen Canyon Dam. About 2 MAF of Powell’s 26 MAF storage capacity is considered “dead storage” because the dam currently has no means to release it. During construction of the dam, the river bypass tunnels were filled with reinforced concrete, thus prohibiting any releases from the dam once reservoir elevations dipped below the 237 foot River Outlet Works.” See at: <http://www.glencanyon.org/about/faq>.

#### **UDWR Response:**

**The comment has been noted. The higher priority out-of-state allocations are already in full use, and have minimal impact on Utah’s allocation.**

## **Draft Study Report 19 – Part 2, Water Needs Assessment:**

### **General Comments:**

#### **LPP Coalition Comment 1:**

*Although there is a hydropower aspect to the Project that provides FERC with certain regulatory permitting jurisdiction, it is important to highlight that the hydropower aspect of the project is incidental to its primary purpose – which is to provide additional water supplies to support expanded residential and commercial development of Washington County and Kane County in the State of Utah. This is reflected plainly in Section 2.1 of the PLP, which lists the following as the first and foremost “purposes” of the project: “[t]o deliver 86,249 acre-feet of the UBWR’s Colorado River water rights on an annual basis from Lake Powell to Washington County (82,249 AF) and Kane County (6,000 AF of diversion or 4,000 acre-feet of depletion) to meet future municipal and industrial (M&I) water demands in southwest Utah.”<sup>64</sup>*

*The purpose of the Project is therefore not to meet current water demands but to facilitate development in Washington County and Kane County. This point was conceded by Eric Mills with the UBWR at the scoping meeting convened by FERC on June 10, 2008, where Mr. Mills stated: “It is first and foremost a water development project.”<sup>65</sup> Mike Noel, General Manager for the Kane*

County Water Agency echoed this point, admitting that, “[r]ight now, the needs assessment does not show a need for this water for quite a ways out.”<sup>66</sup>

*In considering the scope of the Study Reports and NEPA review required for this Project, there are two ways in which the “future” development aspect is relevant. First, if the underlying “need/purpose” of the Project is not compelling, then this may affect the willingness of decision-makers and the public to accept the costs and adverse environmental impacts associated with the Project, or perhaps to scale back the Project scope to reduce its costs and adverse environmental impacts. Second, there seems to be consensus that without the additional Washington County and Kane County water supplies made possible by the Project, the level of projected development in Washington County and Kane County will not occur. Or put another way, the projected development in Washington and Kane Counties will be a direct or indirect consequence of the construction and operation of the Project. This suggests that the resulting environmental impacts of growth in Washington and Kane Counties need to be evaluated in the Study Reports and EIS for the Project.*

<sup>64</sup> PLP, Section 2.1, p. 2-1, (emphasis added).

<sup>65</sup> eLibrary no. 20080610-4015, p.6.

<sup>66</sup> *Id.* at 39.

#### UDWRe Response:

**While it is true that this project is a water conveyance project, the project includes proposed hydropower facilities. The power generated by the project may support the grid system in several alternative ways. The use of power from the project for project power needs would offset demands on the grid that might otherwise be made by the project. The power generated by the project could be delivered to other power generators or users in the system and offset their demands on the grid. The region that could be affected by these deliveries could extend as far as contract parties’ service areas as those contracts may be negotiated after permits for the project are issued. Accordingly, the region may be considered to extend throughout the western United States insofar as the contracted power services for WAPA, Garkane Energy Cooperative, Inc., Page Electric Utility, St. George City, Hurricane City, Dixie Power and Rocky Mountain Power may extend.**

**Refer to the response to USWFS Comment 1 in the General Comments section.**

#### LPP Coalition Comment 2:

**Study Plan: Sections 19.2.2 and 19.4.1 Goals and Objectives and Existing Information and Additional Information Needs, Background Description**

##### **Section 19.2.2**

*“An estimate of existing and future water supplies will also be developed and compared with projected M&I water demands to determine the need for additional future water supply.”<sup>85</sup>*

##### **Section 19.4.1**

- *“Review capacities of existing supplies – the yield and reliability of existing water supplies were summarized for each of the Project participants. Information that was characterized includes the location of the source water, reliable yield of the water supply, water quality, water rights and other institutional issues, and water treatment.*

- Evaluate potential new water supplies – potential new water supplies were characterized based on data from Project participants, including information on the reliable yield, water quality, water rights and other institutional issues, water treatment requirements, and planned timing of implementation for the potential water supplies.”<sup>86</sup>

*The current information in the Study Report is inadequate because it submits only data to the record that has been declared by the auditor’s report as being unreliable. Therefore, the record is not complete or ready for environmental analysis. The Commission Staff must require UBWR to account for all water supplies and water rights in the county as directed in Study Plan 19 (Section 19.2.2 and section 19.4.1) above.*

*For instance, existing and future supplies not listed include:*

- *More water conservation is possible; the Washington County Water Conservancy District’s Water Conservation Plan, 2015 only saves 12 percent, 40 gpcd, or 14,000 (AF) of water over fifty years from 2010 to 2060.*
- *Section 4.2.3.1 WCWCD System Facilities page 4-6, 2015.*
  - *“The District only identifies 4000 ac. ft in future supplies from the Sand Hollow aquifer.. However, Sand Hollow reservoir aquifer currently stores about 100,000 ac-ft with an estimated future capacity of about 300,000 ac-ft. in section 4.2.3.1.”*
- *In section 4.2.3.1 WCWCD System Facilities page 4-6, 2015 “describes Quail Creek Reservoir having a capacity of 40,000 ac-ft and supplies raw water to the Quail Creek Water Treatment Plant. Sand Hollow Reservoir has a 50,000 ac-ft capacity with an active pool of about 30,000 ac-ft and a drought pool of 20,000 ac-ft reserved for extreme drought. However, the WCWCD only identifies a yield of both Quail Creek and Sand Hollow reservoirs as 24,900 ac. ft. yield as future supply by 2060 in the Study Report.”*
- *The yield of Sand Hollow reservoir has been described with much more yield in the past as a “project that serves both as a storage facility and a ground water recharge. The reservoir has capacity storage of 50,000 AF of storage covering a surface area of approximately 1,300 acres. A 20,000 AF drought pool will act as a buffer in extreme droughts. The reservoir acts as a groundwater recharge facility for the Navajo Sandstone Aquifer. This recharge will provide an annual yield of approximately 20,000 AF to the aquifer. The yield of surface water is estimated at approximately 15,000 AF. This project has a total yield is 35,000 AF.”<sup>87</sup> However, in the Study Report it only lists 4000 (AF) yield of water by 2060 for the aquifer and about 4,900 (AF) for the reservoir.*
- *WCWCD has available water rights to divert up to 40,000 (AF) of low quality water annually from the Virgin River at the Washington Fields Diversion. This project will provide for more efficient storage, management, blending, and conservation of these water resources. The Water District does not identify it as future supply in the WNA.*
- *The water agencies of WCWCD and DWR<sup>88</sup> state there are no un-appropriated water rights to be purchased county. This is because these agencies applied and were approved for any remaining water rights in the County.*
- *More agricultural rights could convert to culinary use than what was identified in WNA listed below.*
- *In addition, there is abundant brackish well water in the county that is not being considered as future supply even though credible research exists showing how this could be economically achieved with water treatment.<sup>89</sup>*
- *In the No Lake Powell Water Alternatives Section 3.3.1.2, the maximum projected wastewater treatment plant effluent available for use in 2060 is projected to be 39,500 (AF) per year. However, UBWR only identifies 7800 (AF) as future reuse supply in the WNA.*

- *Future supply does not include all the towns' and cities' water rights that can still be developed in the future.*
- *Future supply does not include water rights outside of the cities' ownership.*
- *In addition, the Utah State Water Plan indicates developable surface water (rivers and streams) supply of 211,000 (AF) in Washington County. The Virgin River Management Plan estimated the potential water supply at 280,000 (AF). Keep in mind UBWR only identifies 98,727 (AF) as annual future supply by 2060 and claims the county will run out of water by 2024.*

Figure 10. Ground and Surface Water Rights

	Acre feet
Utah State Water Plan, developable water supply	211,000
Kanab Creek/Virgin River water supply at 247,000 ac ft for developable supplies; you should take out 35,500 ac ft for Kane and still have 211,000 ac ft for Washington County. <sup>90</sup>	
Virgin River Management Plan, potential water supply <sup>91</sup> Major approved applications that are yet to be developed totaled over 280,000 Acre	280,000

*There are ample existing secondary water supplies and future supply not being counted in the Study Report. Thus, there is no valid reason to add an extra 55 gpcd to per capita use for secondary use which inflates water demand for the pipeline.*

*Secondary water not listed in existing and future supply in WNA 2015 includes:*

- *Section 4.2.5.2.5 Toquerville City, "The current secondary untreated water system in Toquerville City is currently only using a third of its capacity. By 2060 the existing secondary untreated system could be used to full capacity, which could be as much as 2,063 ac-ft per year, the total original water rights of the system."*
- *Section 4.2.5.2.6, "Washington City, Washington City's 2005 Secondary Water Master Plan (Washington City 2005) estimates potential secondary untreated water demand through 2025 and recommends a future pressurized secondary untreated water system. The Plan considered water resource recovery facilities (WRRFs) also known as scalping plants in conjunction with their wastewater system improvements. Preliminary calculations show that on average the amount of water recovered from the scalping plant could take care of the secondary untreated irrigation needs of the community."*
- *Section 4.2.3.3.5 La Verkin City Secondary Untreated System, "The original La Verkin diversion was merged into WCWCD's Quail Creek diversion in 1985 and the WCWCD is responsible to transmit the associated 2,650 ac-ft of water rights. In February 2007 the City of La Verkin acquired these water rights along with the La Verkin Bench Canal Company secondary untreated water system. The original pressurized irrigation distribution system was installed around 1985 and facilities are being used at or near capacity, although there are sufficient water rights to support an expanded infrastructure."*

<sup>85</sup> Study Plan, p. 215, (emphasis added).

<sup>86</sup> Study Plan, p. 217, (emphasis added).

<sup>87</sup> USGS, *Assessment of Artificial Recharge at Sand Hollow Reservoir, Washington County, Utah, Updated to Conditions through 2006 (2007)*, p. 1. See at: <http://pubs.usgs.gov/sir/2007/5023/>

<sup>88</sup> *Water rights of DWR and WCWCD*, See at: <http://citizensfordixie.org/wp-content/uploads/2015/12/WCWCD-Water-Rights-DWR.pdf>

<sup>89</sup> *6 Ways to Reduce Desalting Costs by 50 percent*, Mark Bird, professor at UNLV. See at: <http://citizensfordixie.org/wp-content/uploads/2011/11/Bird-Mark-cost-of-water-treatment.pdf>

<sup>90</sup> *Utah State Water Plan, Utah's Water Resources Planning for the Future*, May 2001, on p. 13. See at: [http://www.water.utah.gov/waterplan/SWP\\_pff.pdf](http://www.water.utah.gov/waterplan/SWP_pff.pdf)

<sup>91</sup> *Virgin River Management Plan*, page 13, See at: <http://www.wcwcd.org/downloads/plans/VRMPFinal5.PDF>

### **UDWRe Response:**

Conservation is essential in meeting future water needs. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Conservation above the levels used in these reports is encouraged by WCWCD; however, the conservation goals used are prudent for planning. These goals have been vetted by Division of Water Resources, each district, community participants, and Maddaus Water Management. They exceed current state goals, utilize available technologies, and, importantly, are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County.

While Washington County does have 100,000 acre feet of water available in the Sand Hollow aquifer, as mentioned in Final Study Report 19 - Water Needs Assessment, the amount of annual recharge to this reserve aquifer is only approximately 8,000 acre feet per year. Future wells are planned to utilize the majority of this annual yield with the remaining portion being reserved for use during dry periods to compensate for any deficit between annual supply and demand. Depleting more than this amount annually will inevitably erode the reserve, an imprudent and irresponsible water resource management practice.

Reliable annual reservoir yield is different than the reservoir capacity and was modeled to be 24,900 ac-ft per year for the Quail/Sand Hollow system.

Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in Final Study Report 19 - Water Needs Assessment. This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands.

### **LPP Coalition Comment 3:**

#### **Study Plan: Section 19.2.2 Goals and Objectives**

*“Determine the validity for the participants’ water supply requests based on estimates of future supplies and demands.”<sup>67</sup>*

*Determining the validity of the Water District’s need is critical to demonstrating the need for the Project. However, based on our research, UBWR’s data on future supplies and demands are seriously flawed. Moreover, in 2015, the Utah Legislature directed the Office of the Legislative*

*Auditor General to perform an audit of the Utah Division of Water Resources. The purpose of the audit was to determine the reliability of the Division's data and assess the accuracy of the Division's projections of water demand and supply. The audit took a year and half to complete.*

*The Audit found:*

*"The division does not have reliable local water use data. In order to effectively manage the state's water resources and plan for future water needs, accurate water use data is critical. The Division of Water Resources relies on water use data submitted by local water systems to the Division of Water Rights as the starting point for projecting future water needs. Unfortunately, we found that the submitted data contains significant inaccuracies. State water agencies as well as local water systems operators also acknowledge these inaccuracies. The Division needs an improved process for ensuring water data is reliable."*<sup>68</sup>

*The Audit report continued:*

*"A consistent methodology and accurate water use data are both necessary to prepare a reliable baseline estimate of the state's future water demand. The current projections are based on a 2000 M&I study which indicates that water was used at a rate of 293 gpcd. Due to concerns with the accuracy of the source data as well as methodology used, we cannot validate the accuracy of 293 gpcd or the projections of future water demand ...."*<sup>69</sup>

*Further, based on our research of the current data in the PLP, UBWR's is using unreliable data for its baseline water use of 439 gpcd in the year 2000. There is no M&I Water Supply and use report for the year 2000 from which to establish an accurate baseline.<sup>70</sup> This is problematic because the PLP relies on the 2000 baseline as the basis for its conservation accomplishments. The error occurs in the 1997 M&I Report that identifies 439 gpcd was for whole Kanab Creek Virgin River Basin, and not the water use for Washington County.<sup>71</sup> This is a major error by UBWR that needs to be corrected in the PLP. We provide more evidence that UBWR makes an error in stating the gpcd was 439 in the year 2000. UBWR states in the 2015 Water Needs Assessment that 439 gpcd was Washington County's 2000 baseline per capita use, and then incorrectly claims WCWCD's per capita water use dropped 26 percent between the years 2000 and 2010. That claim is also contradicted by UBWR's 2006 M&I report<sup>72</sup> with data from 2002 report the total potable use and secondary water use was 354 gpcd.*

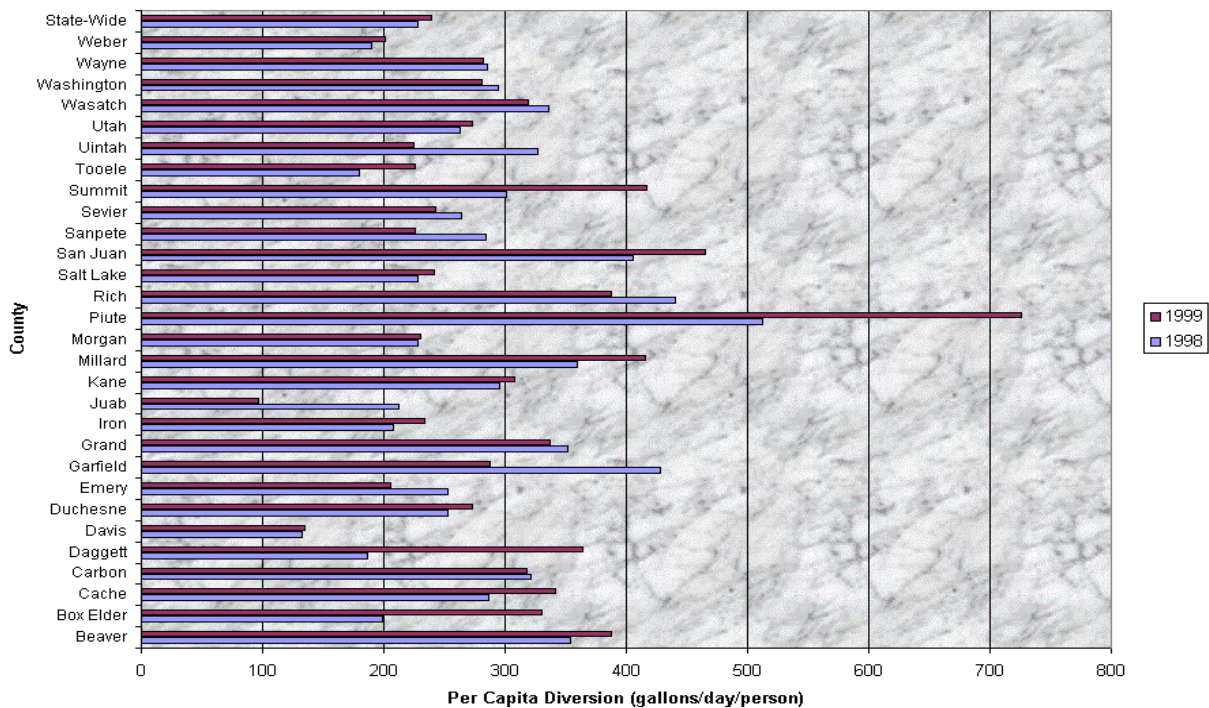
*The Washington County Water Conservancy District (WCWCD) also confirmed the gpcd in the year 2000 was 335 gpcd, and not 439 gpcd. The report also explained how the data was incomplete. Its report stated:*

*"In order to find what water savings have been found throughout the county, the WCWCD has established the baseline water use of 335 gallons per capita per day (gpcd). This number was determined by Boyle Engineering in a study prepared for the WCWCD in 1995. Great strides have been taken in gathering, tracking, and analyzing water data. However, still some of the data has been hard to come by and unfortunately is incomplete. Explanations have been given as needed to indicate missing data."*<sup>73</sup>

*Additionally the Division of Water Rights in its 2000 water report indicates the gpcd was less than 300 gpcd. See Figure 8 below.<sup>74</sup>*



**Figure 8. Per Capita Use Washington County**



*The Auditor also questioned data used to establish the year 2000 as a baseline. The Audit report stated:*

*“We question the reliability of the division’s baseline water use study. We also have concerns about the 2000 water study, which the division uses as a baseline to project Utah’s future water needs. We could not confirm the study’s results because of the lack of documentation of the source data and the steps used to prepare the report. In addition, the 2000 water study relies on a compilation of water studies performed between 1992 and 1999, which may not be representative of the year 2000. Finally, because secondary water systems are not typically metered, much of the reported outdoor water use is based on estimates.”<sup>75</sup>*

*The Audit Report’s summary of conclusions found:*

- *“Water Use Data Lacked reliability. DWR does not have reliable actual local water use data and accurate water use data is critical for effective water management.*
- *Conservation could reduce water demand much further than DWR’s low estimates. DWR assumes water use will decline to only 220 gpcd by 2025 and then no decrease after that to 2060. Thereby, DWR overestimates future water demand.*
- *Does not consider growth in water supply by communities beyond what was developed in 2010.*
- *The current basin plans underestimate the amount of agricultural water that could be available for municipal use in the future.*
- *Policymakers should consider the way water is priced in Utah. Utah’s existing price structure does not encourage conservation.*



- *Policymakers should pursue steps to meter all water use that includes culinary and secondary. Universal metering provides managers data needed to effectively manage their systems.*”<sup>76</sup>

<sup>67</sup> *Study Plan, Goals and Objectives*, p. 216, (emphasis added)

<sup>68</sup> *A Performance Audit of Projections of Utah’s Water Needs*, May 2015, Office of the Legislative Auditor General, State of Utah, Chapter II Reliability of Water Use Data Needs to Improve, p. ii, and p. 24. See at:

<http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>

<sup>69</sup> *Id.* at p. 24.

<sup>70</sup> *There is a M&I report for 1997 and one in 2002.*

<sup>71</sup> *Utah Division of Water Resources, Municipal and Industrial Water Supply and Uses in the Kanab Creek Virgin Basin*, data 1997, p. x.

<sup>72</sup> *Utah Division of Water Resources, Municipal and Industrial Water Supply and Uses in the Kanab Creek Virgin Basin*, data 2006, Table 18, p.43.

<sup>73</sup> *Washington County Water Conservancy District 10-Years of Water Conservation 1995-2005*, p. 15, See at <http://content.lib.utah.edu/utis/getfile/collection/www/id/24/filename/25.pdf>

<sup>74</sup> See at: <http://waterrights.utah.gov/techinfo/wuse/w9899/percap.htm>

<sup>75</sup> *A Performance Audit of Projections of Utah’s Water Needs*, Office of the Legislative Auditor General State of Utah (May 2015), p. ii, See at: <http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>

<sup>76</sup> *A Performance Audit of Projections of Utah’s Water Needs*, Office of the Legislative Auditor General State of Utah (May 2015), See at: <http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>

#### **UDWRe Response:**

**Your comment has been noted. The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**2009 water use data was utilized for the 2011 draft Water Needs Assessment. A more detailed 2010 assessment was completed after it was published. That data showed less water delivered to customers within the Washington County systems. However, the detailed 2010 water data also had the added benefit of the new 2010 census population data, released around 2012. When dividing by the new (lower) official 2010 census population data, the per capita use increased because the population showed some 20,000 less people (this being within the recession years). In summary, the 2015 Water Needs Assessment has the benefit of better water use and population data.**

**Agricultural conversion in Utah occurs on a free-market basis, and will supply some water as the land is developed for other purposes; however, water entities must work within current Utah water rights law protecting water right owners as supplies are transferred, conserved and developed to meet future demands.**

#### **LPP Coalition Comment 4:**

##### **Study Plan: Section 19.2.2 Goals and Objectives**

*UBWR does not address the conclusions and recommendations in the Audit Report in the Study Report. It is a state project and these recommendations on water management should be included in the Study Report.*

*Further, UBWR has not addressed the Governor's recommendations<sup>77</sup> for accurate water need projections in his budget. The budget states:*

*"Assuming that current water usage levels continue as-is or only minor additional conservation occurs, the demand for M & I water is projected to exceed supply over the coming decades as Utah's population continues to grow. Utahans have an important choice to make about water use. The need for additional water supply at some point is a given; however, the timing of water system development varies dramatically depending on changes in water usage. Increased conservation could delay major development projects for decades while the failure to conserve water will lead to accelerated building schedules and their associated increased costs sooner.*

*Prior to undertaking a major expansion to the state's role in water project funding, the following minimum conditions should be met:*

*The details of these minimum conditions include:*

- Better water data and data reporting prior to any state financing or funding, including universal metering of water in all areas that would receive state-funded water and three years of data reporting of water usage under new state reporting standards to be implemented in 2016.*
- Building upon previous efforts, the implementation of new and meaningful water conservation targets that strongly emphasize improved water conservation, including reductions of government water use.*
- Independent validation, including a comprehensive price elasticity and repayment feasibility study, reporting of water use data in CAFRs, and independent validation of project costs.*
- Local funding effort and increased emphasis on user fees, including local conservancy districts paying up front for a meaningful portion of the project itself (for example, the federal government required a 35% local contribution on recent projects); water rates that reflect a local water user effort demonstrating a strong local commitment when compared with the water rates of other state taxpayers that will be paying to finance the projects; and movement away from property taxes in favor of user fees for water (which will enhance economic incentives for conservation).*
- Transparency and local voter engagement through public processes, including public hearings disclosing projected water rate increases and a local vote agreeing to the project and associated state repayment, including needed rate increases.*
- Appropriate financing and repayment terms, including all interest capitalized into the loan; an interest rate set in statute that reflects the state's borrowing costs."<sup>78</sup>*

*UBWR has not addressed these minimum conditions in the Study Report.*

<sup>77</sup> Utah Governor's Budget Recommendations in the Water Budget. See at: <http://citizensfordixie.org/wp-content/uploads/2015/12/Govs-budget-water-12-11-15.pdf>

<sup>78</sup> Utah Governor's Budget Recommendations in the Water Budget. See at: <http://citizensfordixie.org/wp-content/uploads/2015/12/Govs-budget-water-12-11-15.pdf>

**UDWRe Response:**

The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.

The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.

UDWRe and the participating entities will work closely with the Governor's Office and State Legislature in order to ensure the financial framework to fund the LPP is reasonable from a state perspective and based on accurate data and information. These goals as well as other audit recommendations can be achieved concurrently with a NEPA/EIS process.

A financing plan is premature at this stage. First, the FERC license will require UBWR to submit a financing plan for FERC approval before construction is permitted to begin. That will ensure that the project is only constructed if there are sufficient funds committed to complete construction. Second, under the Lake Powell Pipeline Development Act, the project will be funded by the Utah Legislature. Construction of any phase of the project is contingent on UBWR contracting for the sale of at least 70% of the water developed by that phase of the project and the receipt of all necessary permits. Until those events occur, and terms for the sale of project power are established, the final project costs necessary for the Legislature to consider will not be available.

**LPP Coalition Comment 5:**

**Study Plan: Section 19.4.3 Issues and Data Needs**

*"Cost estimates for other proposed water supplies from water providers in the study area will be collected or generated for use in estimating the costs of various water supply alternatives relative to the cost of the LPP."<sup>118</sup>*

*The Study Report is lacking this data. Therefore, the Commission Staff should request this comprehensive analysis from UBWR before the EIS process begins.*

<sup>118</sup> PLP Study Plan 19, p. 219

**UDWRe Response:**

The costs of various alternative supplies are included in Final Study Report 22 – Alternatives Analysis.

**LPP Coalition Comment 6**

**Study Plan: Section 19.4.3 Issues and Data Needs**

*“The potential for additional water reuse and conservation as a means to offset culinary water demands will be addressed”<sup>122</sup>*

*The Study Report results lack this requirement to consider additional reuse and conservation in the Study Report. UBWR claims only 7800 (AF) of potential reuse by 2060 in the Study Report. However, in (Section 2.1.1) it states 49,000 (AF) is possible by 2060.*

<sup>122</sup> PLP Study Plan, p.219 (emphasis added)

**UDWRe Response:**

**Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in the Water Needs Assessment (Study Report 19). This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands. Potential water conservation is also included in the Water Needs Assessment.**

**LPP Coalition Comment 7:**

**Study Plan: Section 19.6.2 Task 1 Water Needs Assessment Phase II**

*“Phase II of the Water Needs Assessment (Final Water Needs Analysis and No Action Alternative) will have two objectives. First, the potential for water reuse will be evaluated, and a Water Efficiency Study will be performed to carefully document potential future water conservation. Second, preliminary water need forecasts developed in Phase I will be updated based on more detailed information obtained from the communities during the Water Efficiency Study and from evaluation of the potential for water reuse. The updated water need forecasts will be incorporated into the revised water demand forecasts and the resulting integrated water resource plans. The water needs assessment will be updated to incorporate comments received from the public and agencies.”<sup>121</sup>*

*UBWR did not analyze the potential of reuse water as required in the Study Plan. They submitted conflicting data into the record. We detail this in our comments below.*

<sup>121</sup> PLP Study Plan, p.220 (emphasis added)

**UDWRe Response:**

**Refer to the response to the previous comment.**

**LPP Coalition Comment 8:**

*(Page 5-11)*

**Water Needs Assessment - March 2011**

*The March 2011 Water needs assessment states the following:*

*“Based on the five sources of water use data reviewed, the Governor’s Water Conservation Team data for the 6 largest cities in Washington County appeared to be the*

*most reliable in determining the historical water conservation achieved in the WCWCD service area since 2000. This is shown in Figure 5-1. The data were analyzed in several different ways.*

- *The percent conservation achieved from 2000 to 2007 was computed since both years have net Et values of 39 inches. The culinary water use reduced from 325 gpcd in 2000 to 281 gpcd in 2007, which is a 14 percent reduction or about 2 percent per year. Extrapolated to 2009 this would be a total culinary water use reduction of 18 percent.*
- *A 5-year moving average of culinary water use was computed for years starting in 2000 through 2005. The 5-year moving average declined from 290 gpcd to 261 gpcd, an average of 2.1 percent per year. Applied to the 2000-2009 period, this results in an estimated culinary water use reduction of 19 percent.*
- *A linear regression was fit to the 10 years of data. The regression line decreases from 308 gpcd to 246 gpcd, a total of 20 percent or 2.2 percent per year.*

*All of the methods of analysis give similar results, with culinary water use in WCWCD's 6 largest cities declining 18-20 percent between 2000 and 2009. DWRe estimated that the secondary water use of 52 gpcd remained relatively constant over this period.*

*Included in the Water Needs Assessments, are water conservation programs from the Maddaus reports. The 2010 Maddaus report saves more water than the proposed water conservation programs in the 2015 Maddaus report. For example, in the 2015 Maddaus report it saves only, 14,515 acre feet of water, or 12 percent, reduces water use to 285 gpcd, and saves 40 gpcd from 2010 to 2060.*

*However, on the other hand the Maddaus conservation program in the Washington County Water Conservancy District Water Conservation Plan of 2010 illustrates a savings of 54,000 (AF) .<sup>116</sup> Further the 2010 Maddaus program show much more savings; Program A., saves 11% by 2035, with a savings of 16,600 (AF) by 2035.*

<sup>116</sup> Washington County Water Conservancy District, Water Conservation Plan, August 30, 2010 p. 33;  
See at: <http://citizensfordixie.org/wp-content/uploads/2011/11/WC-Plan-2010.pdf>

#### **UDWRe Response:**

**Updated data for population projections and per capita water use were used in the 2015 reports. The 2011 report relied upon population projections from 2005 while the 2015 report used 2012 population projections. The decrease in projected population resulted in less anticipated water use, and potential water savings were, likewise, reduced. The 2015 report also used an updated per capita water use data set based on 2010 usage instead of 2007 usage. Both the Water Needs Assessment and 2015 Maddaus report used the best available, most up-to-date information.**

#### ***Executive Summary Comments:***

##### **LPP Coalition Comment 1:**

*(Section ES-3.1, Page ES-2)*

##### **Water Demand Forecast**

*“Total M&I demand for WCWCD is expected to increase from 50,380 ac-ft per year in 2010 to 184,250 ac-ft per year in 2060 (DWRe 2014c). With feasible local project developments estimated to add about 13,670 ac-ft per year, without the LPP, WCWCD demand will exceed supply by about 98,200 ac-ft per year in 2060, with the shortfall starting in about 2024 (Figure ES-2). The LPP is the only water source available to meet this demand.”<sup>79</sup>*

*The PLP is incorrect on water demand due to UDWR’s flawed data collection we detail errors in our comments. We also dispute that the Project is the only water source available to meet water demand. UBWR purposely doesn’t include all water supplies available in the County that would be used if the Project was not built. They also ignore the Auditor’s report and the Governor’s recommendations by not collecting accurate data first and start using water more efficiently before you consider building large expensive water projects. There is no evidence in the record that supports their claim the Project is only source of water for the future. The evidence that is in the record contradicts their claims. For instance, (see Figure 11 below) the Water Needs Assessment (WNA) of March 2011, on page ES-11, table ES-4 contradicts the WNA of 2015 on water demand and gpcd*

*In the 2011 the WNA indicated with a population of 559,670, a baseline per capita use of 294 gpcd and savings of 14% with conservation, the gpcd would be 254 gpcd with a demand of 159,400 ac ft. by 2060, which is much less than 289 gpcd in the 2015 WNA. (See Figure 11.) This conclusion in the WNA of 2011 would mean there are enough existing water supplies for growth until 2060, especially if UBWR collected the correct data on use and counts all the water supplies that UBWR is excluding.*

*Additionally, UBWR makes a significant error in calculating per capita water demand. It adds on 55 gpcd per capita use for secondary water that is an arbitrary number and as the population grows this increases water demand significantly. Also, UBWR adds even more water demand by adding 8505 (AF) annually without validating this amount. For instance, most of the 55 gpcd added onto per capita use includes water used for golf courses, which is now served by reuse water. The reuse plant only operates from late March to late October. Consequently, it should not be added as a daily use and adding 55 gpcd to per capita use increases demand artificially. If UBWR collected accurate water use and supply data as recommended in the audit and the Governor’s budget, and makes the corrections, it would suggest that the County is not running out of water by 2024. The County has an abundance of existing water supplies and secondary water for future supply. Thus, there is no need to add 55 gpcd to per capita use. We detail all the extra water supplies and secondary water supplies not identified as future supply by UBWR in our following comments.*

*Throughout the study report it refers to Division Water Resources (DWR) data reports 2013-2014. However, according to DWR, there are no reports and they only have data from 2010. Therefore, all those references should be deleted from the Study Report. The Commission Staff should require UBWR to provide current validated data on water supplies and demand to determine if there is a need for the project by 2024. As directed in the Study Plan 19.2.2. Goals and Objectives above before the EIS process begins.*

*UBWR is using the wrong population growth rate. According to Section 3.1.1., WCWCD projected population is using a 3.6 percent annual growth rate for the next 15 years. However, Utah’s Work Force Housing is currently using 2.2 percent for 2013-2014. This also pushes up water demand artificially.<sup>80</sup>*



<sup>79</sup> Study Plan, p. ES-2, (emphasis added)

<sup>80</sup> <http://jobs.utah.gov/wi/pubs/countiesinreview.pdf>.

**UDWRe Response:**

**Secondary water is important to include because it offsets demands that would otherwise have to be met by culinary water.**

**LPP Coalition Comment 2:**

(Section ES-3, Page ES 3-3)

**Water Demand Forecast, WCWCD**

*“There is no practical water conservation program that could offset reasonably anticipated demand over the study period.”<sup>110</sup>*

*The Study Report results that conservation programs could not replace the Project are incorrect. UBWR did not consider any other conservation programs in its analysis except reverse osmosis. For example, the Jordan Valley Water Conservancy District (JVWCD) had 585,372 residents in 2010 and will spend only \$7,899,000 and save 144,200 (AF) of water over the next five years according to their 2014 Water Conservation Plan,<sup>111</sup> UBWR will spend billions of dollars for the Project to get 86,264 (AF) and only saves 14,000 (AF) from the year 2010 to 2060. Clearly UBWR could develop a conservation plan to gain 86,264 (AF) by 2060 at less cost and not have to spend billions of dollars on the Project.*

*In addition, the JVWCD from the year 2000 to 2013 saved 237,000 (AF) and only spent \$14,189,568 on conservation programs, shown on page 16, of the plan. This plan shows that water conservation is a very viable alternative to the Project and it is a lot cheaper for the state taxpayers.*

*Moreover, the Auditor investigated the method for forecasting water demand by UBWR for a year and half. They found that statewide “conservation and policy choices can reduce demand for water conservation will lead to less water use. We question the division’s projected demand for water, which assumes Utah residents will consume on average 220 gallons per day through the year 2060. The accuracy of this projection appears overstated for a number of reasons. First, the projected amount of water use, 220 gpcd, is based on a 2000 baseline water study, which, as described in Chapter II, may be unreliable. Second, other western states appear to use less water than Utah, indicating Utah residents may be able to further reduce their water use. Third, ongoing trends towards conservation should continue to reduce per capita water use beyond the state’s 25 percent conservation goal.”<sup>112</sup>*

*Furthermore, the auditor concluded, “We could not find many other states with conservation goals to compare to Utah’s projected demand of 220 gpcd in 2060. Only California has a statewide conservation goal which is to reduce water use to 154 gpcd by the year 2020. However, we find one regional comparison that is insightful. The Southern Nevada Water Authority, which serves the Las Vegas region, has a goal to reduce water use to 199 by 2035. In contrast, the communities in Southwestern Utah, which have a climate that similar to that of Southern Nevada, have a goal to reduce water use to 292 gpcd by the year 2060.” 113*

<sup>110</sup> PLP Study Report 19, p. ES-3(emphasis added)



<sup>111</sup> Jordan Valley Water Conservancy District's, *Water Conservation Plan 2014*, p.28 See at: <http://citizensfordixie.org/wp-content/uploads/2011/11/Jordan-Valley-Water-Conservancy-District-Water-Conservation-Plan-2014.pdf>

<sup>112</sup> *A Performance Audit of Projections of Utah's Water Needs*, Office of the Legislative Auditor General, State of Utah, May 2015, p. 13, See at, <http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>

<sup>113</sup> *A Performance Audit of Projections of Utah's Water Needs*, Office of the Legislative Auditor General, State of Utah, May 2015 Chapter III, p. 25, See at, <http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>, (emphases added)

## **UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**Although per capita water use comparisons are often made, they are usually inappropriate, even among desert communities, due to differences in calculation methods, economic dynamics, and climate.**

**Without closely examining each source of data, it is impossible to know if population and water use are calculated the same way. If census population is used, then a high percentage of second homes would result in a higher per capita use than the average full-time resident uses. If populations are calculated based on number of water connections, then a high percentage of second homes would result in a lower per capita use than the average full-time resident uses. It is also important to identify whether or not secondary water use is included, and whether or not wastewater return flows are deducted (see, [https://www.snwa.com/ws/recycled\\_returnflow.html](https://www.snwa.com/ws/recycled_returnflow.html)).**

**Even if the calculation methods are identical, there are other easily identifiable differences between communities that result in higher water use. For example, when a county is compared to city or a smaller city is compared with a much larger city, there is a notable difference in population density. A lower population density typically equates to more landscaped area and outdoor watering. Differences in commercial, institutional and industrial sectors can also significantly impact total water use. Washington County, for example, has a number of second homes and tourists that visit and contribute to water use but are not counted in the population.**

**Climatic differences between communities, such as temperature, precipitation and evaporation rate, substantially effect outdoor water use. Communities in warm, dry climates have a longer growing season which results in more water being used. High temperatures and low rainfall during this growing season also increases the amount of water needed to sustain similar landscapes in even slightly cooler, wetter areas.**

**These differences across communities make it difficult to find relevant per capita water use comparisons.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional**

population, multiple strategies, including conservation, will need to be implemented simultaneously.

The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.

**Lisa Rutherford and Paul Van Dam Comment 9:**

*2015 Water Needs Assessment*

***Executive Summary***

***Water Needs Assessment – ES 2 – Districts (Page ES-1)***

*WCWCD and its customers have active conservation programs and are committed to the fulfillment of realistic and practical water conservation achievements that reflect the water wise standards promoted in its service area for the past 20 years. However, given the limitations on Virgin River supply and diversions to the district's off-stream reservoirs, as well as water quality limitations unique to the Virgin River, local supplies will not meet long-term demand.*

***COMMENT***

*How do they define "active" conservation program. As a resident of Washington County, Utah for fifteen years, it is not what I consider "active" but rather "passive." There is only one mandate in the program shown in the latest Maddaus "Conservation Technical Analysis" (2015). Other conservation measures are listed as "education or incentives." If 'acceptance by local customs' is the bar by which they gauge whether a conservation measure will be acceptable and should be implemented, true conservation will not be realized in the future. Approving the Lake Powell Pipeline Project (LPPP) will be rewarding bad behavior. Applicant should be required to prove that their conservation efforts are reasonable given what other desert communities have done before Commission approves project.*

*How can they say that water wise standards have been promoted in the service area for the past 20 years when our rates are so much higher than those of other similar desert areas that have had more focused conservation programs and now have much lower water rates than we, according to the BOR's "Moving Forward 2015" report. For the state and district to use "water supplied" to compute our water usage rather than having actual water metering means we need better numbers before committing ourselves to this project or FERC approving.*

*Given the lack of progress seen in the area with regard to real water conservation, that is the real "limitation" not the Virgin River or water quality.*

**UDWRe Response:**

**See the response to Utah Rivers Council Comment 5.**

**Lisa Rutherford and Paul Van Dam Comment 10:**

## **Water Needs Assessment – ES 3 – Water Demand Forecast**

### **ES-3.1 WCWCD (Page ES-2)**

Total M&I demand for WCWCD is expected to increase from 50,380 ac-ft per year in 2010 to 184,250 ac-ft per year in 2060 (DWRe 2014c). With feasible local project developments estimated to add about 13,670 ac-ft per year, without the LPP, WCWCD demand will exceed supply by about 98,200 ac-ft per year in 2060, with the shortfall starting in about 2024 (**Figure ES-2**). The LPP is the only water source available to meet this demand. The full LPP supply will meet demand through 2060, the end of the study period.

### **COMMENT**

The data used to support the demand forecast is based on old, outdated information. The 2015 Maddaus “Conservation Technical Analysis” used information that is not in keeping with actual usage. The Washington County Water Conservancy District’s (WCWCD) consultant Jeremy Aguero reported in 2013 that our overall usage was around 46,000 afy – down from what’s shown above (50,380 afy in 2010) – and we were using 270 gpcd. The projected demand of 184,250 afy in 2060 is based on projected usage of 285 gpcd, above the 270 reported by the district in 2013. I request that the Commission not allow the Applicant to use information that is clearly old for projecting future needs.

Projecting usage of 285 gpcd in 2060 is a very poor conservation goal. In the WCWCD’s Special Summer Edition Water Line 2011 water manager Ron Thompson stated that he can provide 105,000 afy WITHOUT the LPP for 280,000 residents but failed to add that would be at 335 gpcd! Below tables show we could achieve 2060 water needs for projected population at 164 gpcd. This achievement is based on the water WCWCD says they can provide with little consideration of treatment options and agricultural conversion.

The following table shows that real and reasonable conservation can get our water demand down:

<u>gpcd</u>	<u>Pop 2060*</u>	<u>Gals/day</u>	<u>AF/day</u>	<u>Needed AFY</u>
285	576,850	164,563,014	504.79	184,250
270	576,850	155,749,500	477.76	174,382
200	576,850	115,370,000	353.90	129,172
164	576,850	94,603,400	290.19	105,921**
150	576,850	86,527,500	265.42	96,879

\* Table 3-1 of WNA

\*\* Near what district manager Thompson said he could provide WITHOUT LPP.

It’s apparent that the water we have will take us far into the future without the LPP. With other communities challenging themselves to achieve even better conservation, who knows how much further our water can go.

Additionally, the 105,000 that WCWCD manager says he can provide DOES NOT INCLUDE 30,000 afy or more of agricultural water (~60k afy are diverted to Washington County annually), much of which will be converted as the county is developed to accommodate the planned 576,850. The 105,000 includes only about 10,080 afy agricultural water. Water rights may be an issue at this time, but already much agricultural water has been converted as growth occurred, and more will in the future. A 2015 Utah audit of the Utah’s Division of Water Resources in Chapter 4 addresses the issue of agricultural water not being considered

properly by the Applicant.

*The following table shows how many people could be supported with the district's "promised" 105,000 afy at different usage levels (gpcd):*

	SUPPORTED	GALLONS	AF	AF	PROJECTED	
<u>GPCD</u>	<u>POPULATION</u>	<u>PER DAY</u>	<u>PER DAY</u>	<u>PER YR</u>	<u>POP*</u>	<u>YEAR</u>
335	280,000	93,780,822	287.67	105,000	279,270	2030
270	347,336	93,780,822	287.67	105,000	369,370	2040
239	392,388	93,780,822	287.67	105,000	369,370	2040
220	426,276	93,780,822	287.67	105,000	369,370	2040
200	468,904	93,780,822	287.67	105,000	468,990	2050
195	480,927	93,780,822	287.67	105,000	468,990	2050
164	571,834	93,780,822	287.67	105,000	576,850	2060

*\* Table 3-1 WCWCD Population Projections 2015 LPPP Water Needs Assessment*

#### **UDWRe Response:**

The Water Needs Assessment (WNA) contains the most up-to-date water use information. The commenter is comparing total water use, used in the assessment, with potable-only water use data, used in a finance presentation. Untreated secondary water use, which is billed differently than potable water, was not included in that presentation.

WCWCD recognizes conservation is essential in meeting future water needs. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Conservation above the levels used in these reports is encouraged by WCWCD; however, the conservation goals used are prudent for planning. These goals were vetted by Division of Water Resources, each district, community participants, and Maddaus Water Management. They exceed current state goals, utilize available technologies, and, importantly, are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County.

The 105,000 ac-ft per year potential yield without the Lake Powell Pipeline was derived from the 2011 WNA. This potential yield was reduced in the updated WNA to correct double counting of secondary sources by the WCWCD and the municipalities which it serves and to reflect a reduced yield from the planned Ash Creek Project. This potential yield includes agricultural conversion water and wastewater reuse, which require additional storage and treatment to be fully utilized.

There are additional agricultural water supplies in Washington County; however, use of these supplies in many cases will require additional storage and treatment. The 10,080 ac-ft per year is the estimated remaining available yield of agricultural water in the Washington Fields area. This is the largest yield area and the most likely to be developed within the project timeframe. This water has a very high TDS and will require blending or additional treatment.

Refer to the response to Andrew Kramer Comment 5.

#### **Lisa Rutherford and Paul Van Dam Comment 11:**

### ES-3.1 WCWCD (Page ES-3)

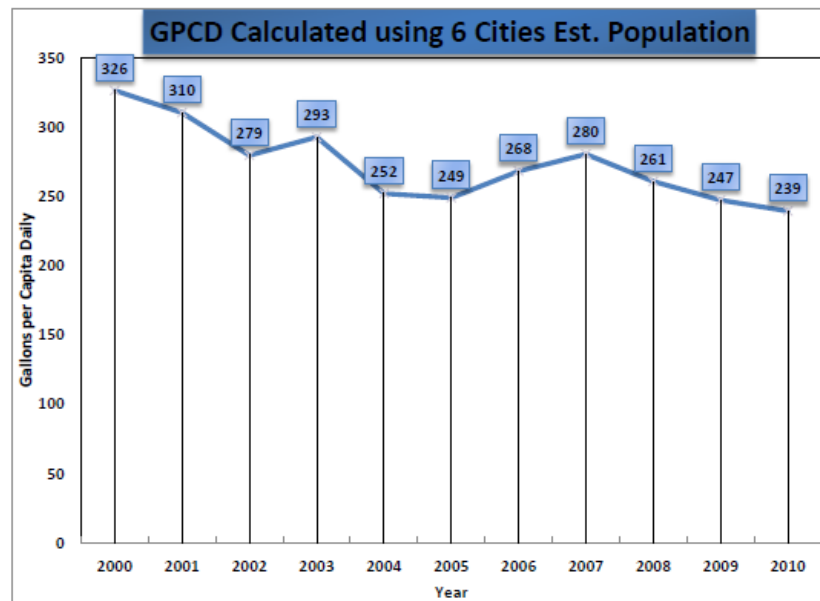
These estimates take into account anticipated effects of conservation efforts on demand and climate change on supply. WCWCD's per capita water use dropped 26 percent between 2000 and 2010 and is expected to drop another 12 percent from 2010 values by 2060. There is no practical water conservation program that could offset reasonably anticipated demand over the study period. Climate change effects are estimated to reduce the supply by up to 23 percent in the months of May through July (Reclamation 2014, 50th percentile).

#### COMMENT:

There certainly are "practical conservation program" methods that can offset the anticipated demand. It is unreasonable to allow Utah's Division of Water Resources to use water usage data from 2000 and 2010 (439 gpcd and 325 gpcd, respectively from the Maddaus "Conservation Technical Analysis" of 2015) to project future water consumption when we are already below what they are projecting for 2060 (285 gpcd); we are at or below 270 gpcd right now according to WCWCD's information provided at a 2013 meeting and in their own Water Line publication. The WCWCD's previous online conservation report provided the following chart that has numbers much different than those provided in the 2015 WNA under consideration and the 2015 Maddaus report.

From: *Washington County Water Management and Conservation Plan May 21, 1996* Revised December 31, 2010 (formerly on WCWCD website)

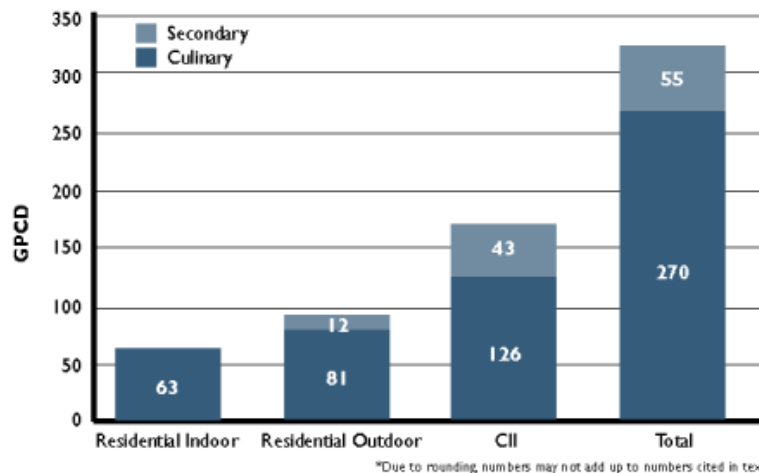
Figure 2: GPCD calculated using 6 cities estimated population



Although the chart is for six cities only, are we to believe that including other WC areas would really raise the 2000 usage from 325 gpcd to 439 gpcd and the 2010 usage from 239 gpcd to 325 gpcd? With WCWCD asserting that our 2013 usage was 270 gpcd, if true, and their own Figure 3-1 showing 325 in 2010, their conservation measures are apparently going in the opposite direction than they should. This 1996 conservation plan (revised in December 2010) has been replaced by a new 2015 conservation plan. The new 2015 Conservation Plan shows 325 gpcd as the 2010 figure. Since the chart above used "estimated population" to compute the

2010 239 gpcd, and the chart below shows the 2010 gpcd at 325, this may provide additional evidence of Washington County's slower growth. It certainly shows that conservation is not being effective.

Figure 3-1. 2010 Gallons Per Capita Per Day (GPCD) Water Use\*



Using the 2015 WNA and Maddaus figures, a 12% reduction from 2010's 325 gpcd by 2060 would still keep us at 286 gpcd, which could be challenging for the reduced supply they assert. However, for the state to assert that 23% reduction in supply would be too onerous given our current real usage is without merit. If we were to reduce our current usage by 23% to meet the supply reduction, that would put our usage at 208 gpcd, which is completely reasonable and yet still above what other desert cities are using now.

What do they consider a "practical water conservation program?" If "practical" means a program that citizens will accept without question rather than something that is really needed, then they are right, but they have not really made an effort to create a truly effective program.

Figure ES-2, below, from the 2015 WNA that attempts to show the need for the LPPP, has our current and future possible usage superimposed to show where we could be with reasonable conservation all the way out to 2060 using the 105,000 afy that WCWCD says can be provided without the LPP.



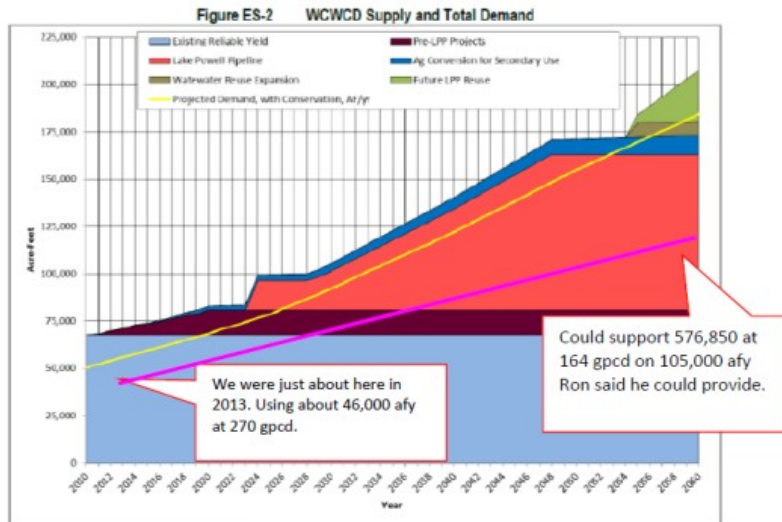
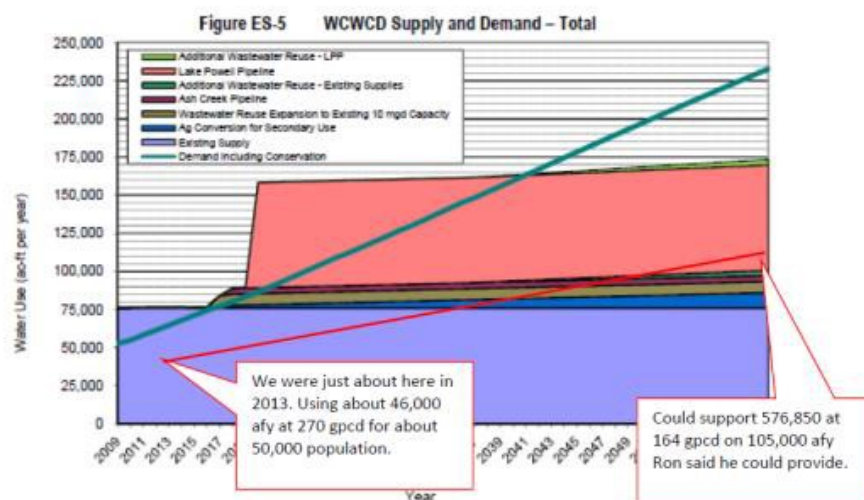


Figure ES-5 below from the 2011 WNA, is constructed differently than the 2015 WNA chart above and makes it even clearer with “actual” and “future reasonable” usage how far our existing water will take us. Interestingly, this 2011 chart shows approximately 75,000 afy as “existing supply” while the 2015 chart shows the 67,498 afy from WNA table ES-1 as current reliable supply. Where did the 7,502 afy go? From the 2011 WNA (Page ES-15):

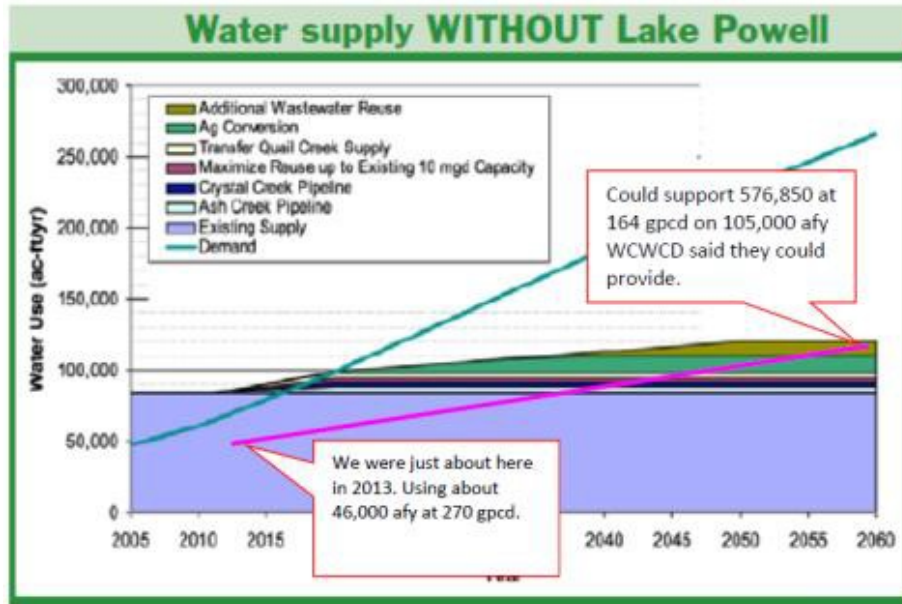
The total existing reliable supply in Washington County, including those rights owned by the WCWCD and all other entities, is approximately 74,560 ac-ft/yr of potable supply and 7,450 ac-ft/yr of secondary supply (DWRe 2007a; DWRe 2009b).

**From 2011 WNA:**



Additionally, I submit this chart from the WCWCD’s 2010 Spring Water Line that shows demand *WITHOUT* the LPP. Again, I have superimposed our “actual” use in 2013 and our “reasonable and possible” use in 2060:





*Perhaps the Commission can understand why Washington County citizens such as I, and many others, are so confused by the information that the State of Utah's Division of Water Resources, the Applicant, and our own district have provided to the Commission in support of approving the LPP. Perhaps the commission is confused by their information, too?*

*The demand and water usage figures seem to be such a moving target as to dismay all who attempt to comprehend but allow the state and district to frame this issue in any way they choose to meet their own needs.*

#### **UDWRe Response:**

**The 2015 Water Needs Assessment uses the most accurate and up-to-date water demand and supply data. The 270 gpcd referenced by the commenter is potable use only and does not include 55 gpcd secondary use.**

**Conservation is essential in meeting future water needs. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Conservation above the levels used in these reports is encouraged by WCWCD; however, the conservation goals used are prudent for planning. These goals have been vetted by Division of Water Resources, each district, community participants, and Maddaus Water Management. They exceed current state goals, utilize available technologies, and, importantly, are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County.**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards**

**an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

**Lisa Rutherford and Paul Van Dam Comment 12:**

***ES-3.3 Conservation and Climate Change (Page ES-7)***

*Two factors that influence water demand and supply are conservation and climate change. Conservation has been a hallmark of WCWCD's focus since 1995. Several conservation measures have been implemented since 1995 and all municipal customers that are part of the Regional Water Supply Agreement have been required to comply. Because of this, a culture of conservation has begun to develop in the county and between 2000 and 2010 WCWCD achieved 26 percent reduction in per capita water use. WCWCD has already exceeded the statewide established goal of 25 percent reduction by 2025.*

**COMMENT**

*The WCWCD's August 28, 2015 Maddaus/MWH "Conservation Technical Analysis" indicates that 439 gpcd was the consumption in 2000 and 325 gpcd was the consumption in 2010. Although this may represent a 26 percent reduction, it is not a stellar achievement compared to other areas. Washington County has a long way to go before they can say they have made real progress in water conservation. Other communities such as Colorado Springs, Colorado that recently built a 50- mile pipeline for nearly \$1 billion, focused much more on conservation and were able to grow to 400,000 before taking on such a major project. The State of Utah and Washington County can do much better before needing a multi-billion dollar pipeline.*

*The Applicant needs to provide better detail to substantiate their claim and explain why capacity cannot be increased to accommodate the added flow.*

**UDWRe Response:**

**As noted in previous responses (Refer to the response to LPP Coalition Comment 2 in the Study Report 19 – Water Needs Assessment, Executive Summary section), it is difficult to make relevant per capita use comparisons. Difficulties associated with increasing the capacity of the Quail Creek diversion and pipeline will be addressed in the subsequent comment response (Lisa Rutherford and Paul Van Dam Comment 13).**

**Lisa Rutherford and Paul Van Dam Comment 13:**

***ES-3.3 Conservation and Climate Change (Page ES-7)***

*If snow precipitation is limited then the potential for storage is limited. Rain precipitation often causes intense, "flashy" storm events. If river flow exceeds the Quail Creek diversion pipeline capacity, the water cannot be stored and is lost. Therefore, more storage will not help overcome the impacts of climate change for WCWCD.*

**COMMENT**

*Why can't QC diversion pipeline capacity be increased to accommodate the added flow? I do not think this has been addressed sufficiently to be able to discount the possibility. In fact, this WNA entry seems to deal with QC storage specifically and does not really address of idea of more storage other than QC being useful for excess flow. The Applicant should be expected to explore this more thoroughly.*

**UDWRe Response:**

There are other issues related to capturing high Virgin River flows in storage including sediment and diversion capacity. The flow duration for flow greater than what can reasonably be captured would require a facility that could capture flows between 250 cfs and 2500 cfs. The size of the diversion and related pipeline or canal system was evaluated and dismissed as environmentally and cost prohibitive back in the 1980s. A study was performed by Bulloch Brothers Engineering which included a diversion dam near Grafton, a large canal taking the water to a new reservoir site in the Fort Pearce area and related facilities. After initial consultation with Department of Interior agencies, the proposal was dismissed.

**Lisa Rutherford and Paul Van Dam Comment 14:**

***ES-3.4 Per Capita Water Use (Page ES-8)***

*Per capita residential water usage in WCWCD and KCWCD for 2010 is shown in **Table ES-2**, below. Total per capita water use rates, reported in **Chapter 3**, are addressed in this Assessment because of their value in project planning. By estimating total per capita water use rates and residential population served, water managers can plan for the likely needs of the future. With the conservation goals applied to the total use, managers have some assurance that sufficient water will be there to fulfill all appropriate demands as they may be redistributed among various users over time.*

**Table ES-2 2010 Residential Per Capita Water Use**

District	Culinary (gpcd)	Secondary untreated (gpcd)	Total (gpcd)
WCWCD	143	12	155
Kane County Subbasins	141	36	177
KCWCD (Kanab City and Johnson Canyon)	139	15	154

Source: DWRe 2013b; DWRe 2013d; DWRe 2014c

**COMMENT**

*Albuquerque’s current residential per capita is 92.3 and includes single family and multi-family homes. Even if their “non- revenue” and “other” were included (28.5), they would still be below us at 120.8. The LPP under review by FERC is being justified by the Applicant based on need. For the state and WCWCD to assert that we cannot be compared to other locations is without merit. The WCWCD’s own 1995 and 1997 Boyle Reports, used to analyze the need for the LPP initially, compared WC to other desert areas. The May 2015 audit by the Utah Office of the Legislative Auditor General, “A Performance Audit of Projections of Utah’s Water Needs,” compared water usage in a variety of states. Other reports, including the BOR’s “Moving Forward 2015” report compare various cities in the Colorado River basin and their usage. When compared to other desert areas, which comparison has been shown to be appropriate, Washington County’s need for the LPP water is very suspect and should be rejected by FERC. (Page ES-8) Total water use numbers calculated in this study do not provide valid comparisons to other water users in the United States. The factors that contribute to the total per capita numbers are a unique combination applicable to southwest Utah.*

**UDWRe Response:**

Although water use comparisons are often made, they are usually inappropriate even among desert communities. For example, Albuquerque’s residential use stated above may not have been calculated the same way that Washington County’s residential use was calculated. Without knowing the source of the data, it is impossible to compare how residential water use and population were calculated. If census population were used, then a high percentage of second homes would result in a higher per capita use than the average full-time resident uses. If populations were calculated based on number of water connections, then a high percentage of second homes would result in a lower per capita use than the average full-time resident uses. It is also unknown if all of Albuquerque’s outdoor water, including secondary untreated water, is metered or if estimates were made to quantify these uses.

Even if the calculation methods were identical, it is easy to identify differences between Albuquerque and Washington County that result in higher water use. For example, Washington County is not a city. The 2010 residential per capita use of St. George, Washington County’s most populous city, is 5 gpcd lower than that of the entire county. Smaller communities increase the county average which would likely occur if communities surrounding Albuquerque were included in its per capita use. Also, Albuquerque is a much larger city than St. George and has a higher population density which would result in less landscaped areas that require watering. Albuquerque is at an approximate elevation 5,000 feet above sea level while St. George is at about 3,000 feet, and during irrigation season (May through September), Albuquerque receives 5.2 inches of rain and averages 72 °F while St. George receives 1.5 inches of rain and averages 80 °F. These climatic differences mean that the same landscape would require more water in St. George than in Albuquerque.

	People per square mile <sup>1</sup>	Approximate elevation (feet MSL)	May-Sep. average temperature (°F) <sup>2</sup>	May – Sep precipitation (inches) <sup>2</sup>
Albuquerque	2,908	5,000	72	5.2
St. George	1,035	3,000	80	1.5

<sup>1</sup>2010 US Census data

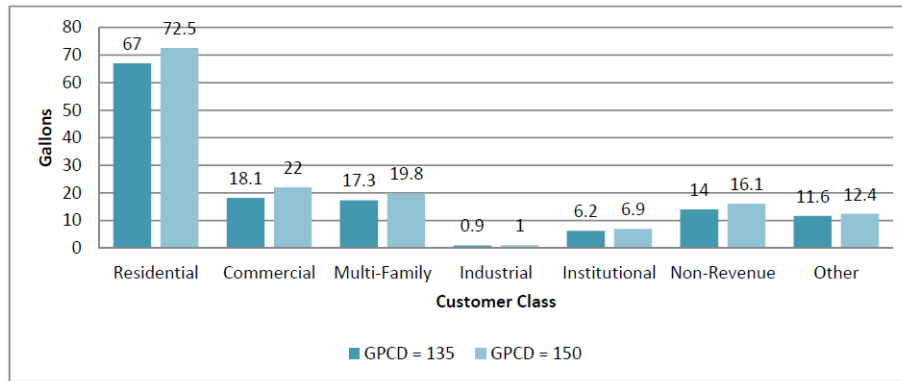
<sup>2</sup>Cohen, M.J. 2011. *Municipal Deliveries of Colorado River Basin Water*.

#### Lisa Rutherford and Paul Van Dam Comment 15:

##### **COMMENT**

*This is not true and is certainly not reason to approve this project. Other communities do report all water – not just residential as the WNA suggests. Other communities I’ve contacted do include all water and CII users, too. Other areas that have lower per capita usage also have non-permanent residents, tourists, universities, and long growing seasons – reasons used by Applicant and Washington County for our high usage rates. These are not reasons to use or demand more water. They are reasons why we should be even more conservative in our water usage. From Albuquerque’s 2024 Water Conservation Plan:*

Figure 6 – Water Use in 2024 By Customer Class 135 GPCD vs 150 GPCD



The “Other” class contains approximately 1,300 “irrigation – only accounts” that are specifically for large turf customers (parks, golf courses, athletic fields).

#### UDWRe Response:

Please see response to previous comment regarding comparisons between Washington County and Albuquerque. System-wide per capita use comparisons are less relevant than residential use comparisons because commercial, industrial and institutional breakdowns and water uses vary greatly across communities.

#### Chapter 1 Comments:

##### Lisa Rutherford and Paul Van Dam Comment 16:

*Water Needs Assessment - Chapter 1 – Overview*

#### **1.3 The Potential Recipients**

##### **1.3.1 Washington County Water Conservancy District (Page 1-2)**

*In addition, given the risks posed by drought, climate change and the demand hardening that accompanies conservation, the ability to tap into Lake Powell, an on-stream reservoir that gathers water from the entire upper basin of the Colorado River, would add important diversity of supply not available from the off-stream reservoirs that currently tap the Virgin River to supply Washington County. Furthermore, the long range reliability of the Lake Powell supply avoids the drastic economic losses that can occur if businesses see a risk of unstable water supplies and cease to maintain and invest in the area.*

#### **COMMENT**

*The long range reliability of the Lake Powell supply is not at all well defined as evidenced in the applicant’s own Draft Study Report 19: Climate Change. With the challenges facing the Colorado River’s current 25 million “major metropolitan” users (40 million total), over-allocation of the river’s dwindling water flows, and projected additional population growth, it remains to be seen if Lake Powell will provide the reliability the district and state assume. They assume that management practices on the river will change to accommodate the intake for LPP remaining safe. That is a big assumption to use in placing financial burdens on citizens. Although the Virgin River might also be challenged due to climate change, relying on it would at least not encumber our citizens with the expense of this project. It does the citizens of Utah and specifically our county no favor to approve Applicant’s request for the LPP and as a resident faced with this burden, I request the FERC deny this Applicant.*



**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 17:**

***1.3.1 Washington County Water Conservancy District (Page 1-3)***

*Impact fees, paid by new development for capital costs of facilities necessary to supply water, are increased with increasing irrigated area, thus encouraging new development to minimize outdoor use of water. Lots in excess of 10,000 square feet pay for the additional area unless a water conservation agreement is recorded to limit irrigated landscape.*

**COMMENT**

*Some impact fees are currently being secured by promissory notes rather than direct payment. Will this “bird in the bush” rather than a “bird in the hand” agreement with developers amount to a giveaway if home sales slump again? \$9.8 million was collected (or promised?) in both residential and commercial impact fees according to the WCWCD’s 2014 financial statement. Although this is up from the approximately \$3.3 million according to the 2010 WCWCD financial audit, it is hardly enough to allow the district to assert that “impact fees will pay for the LPP.” It is also down from 2013’s \$10.1 million, which begs the question during this economic upturn following the Great Recession, “Is St. George falling out of favor?”*

*From the 2014 Utah Division of Drinking Water state audit:*

*In 2014, the minimum residential culinary water cost in St. George was \$6,408 per connection. An additional impact fee of \$5,042 was charged for outdoor irrigation water. The city charged \$1,211 to distribute and store this water, resulting in a total impact fee of \$12,661. If the state average day indoor requirement was reduced, a portion of these fees might also be reduced.*

*The State of Utah’s 2016 legislative session saw bills such as HB305. The bill would have authorized the Divisions of Water Rights and Drinking Water, in conjunction with the Division of Water Resources (DWRe), to collect and verify water use and supply data, and require DWRe to validate the accuracy of water use data reported by public water suppliers. Given the audit advisory shown above, if this happens, will the impact fees collected by WCWCD and used to justify the LPP be sufficient?*

*Even during boom times, investors and ratepayers should be wary of how much water systems rely on fees from new connections to generate revenue—the boom times will only last so long and rate adjustments needed to offset revenue loss are sure to cause water customers sticker shock.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 18:**

### ***Washington County Water Conservancy District (Page 1-3)***

*A conservation provision requires municipal customers to maintain or implement*

- *water conservation plans,*
- *water conservation rate structures,*
- *time of day water use ordinances,*
- *landscape ordinances*

*The only source available to augment Virgin River basin groundwater supplies traditionally relied upon for municipal use has been development of Virgin River basin surface water, requiring the construction of storage and transmission facilities. The WCWCD's first project, the Quail Creek diversion and offstream reservoir, was completed in 1985. The construction of Sand Hollow reservoir in 2002, integrated with the Quail Creek project, brought the average annual yield of Virgin River water of the reservoirs to 24,922 ac- ft per year today. In addition Sand Hollow Reservoir operates as a groundwater recharge system, currently storing over 100,000 ac-ft, available as a drought reserve.*

### ***COMMENT***

*Current water conservation rate structures are not sufficient to encourage conservation and are the lowest in the desert southwest encouraging the highest usage rates. Landscape ordinances also do not encourage conservation. Watering is still seen during 100+ degree days, during the middle of summer days, and watering in December and January when irrigation systems should be off is still seen. Citizens who live in Planned Unit Developments complain that they are not allowed to change their landscape watering timers resulting in over-watered "squishy" lawns with mushrooms growing!*

*According to the 2015 Fitch rating of the WCWCD, our county has very adequate supplies to meet our growth needs:*

### ***AMPLE SUPPLY AND CAPACITY***

*The district has ample water supply, is expanding its water reserves through a groundwater recharge program, enjoys surplus system capacity, operates predominantly new infrastructure, and faces no known regulatory issues. Over 25% of the district's water supply is surplus and will be used to serve future growth. The district's peak summer demand is 37 million gallons per day (mgd) and winter demand is 6-7 mgd compared with capacity of 48 mgd increasing to 60 mgd within a month. The district is operating a groundwater recharge program that currently provides 100,000 acre-feet (af) of water and will ultimately provide access to up to 300,000 af.*

### ***MODERATING SERVICE AREA GROWTH***

*After experiencing rapid population growth equal to about 50% over the last decade, the rate has slowed to 2%-3% annually. This has resulted in less pressure for system expansion.*

*The 300,000 af groundwater referenced above may be the added LPP water, but even without that, the rating implies that the district has sufficient supply and also notes that growth has slowed.*

### **UDWRe Response:**

**The 2015 Fitch ratings took into account the plans to add Lake Powell Pipeline Project water as a water source.**



**Lisa Rutherford and Paul Van Dam Comment 19:**

*(Page 1-4) Water quality is compromised by the LaVerkin hot springs, coming in at about 10 cubic feet per second at 10,000 parts per million of total dissolved solids (TDS).*

**COMMENT**

*This water could be treated at a much lower cost than the LPP cost.*

**UDWRe Response:**

**Your comment has been noted.**

**Chapter 2 Comments:**

**LPP Coalition Comment 1:**

*(Section 2.1.1, Page 2-1)*

**Planned and Poetntial Future Water Supply Projects of WCWCD**

*“Wastewater reuse would make additional culinary supply available by offsetting secondary demand currently being met with culinary water. The 2060 maximum potential wastewater reuse quantity in theory) is projected to be 49,000 acre-feet per year, assuming there is sufficient capacity to store and provide for beneficial use all of the available return flows. The maximum projected wastewater treatment plant effluent available for reuse in 2025 is projected to be 16,774 acre-feet per year, increasing to 34,453 acre-feet per year by 2052. The RO treatment of 34,453 acre-feet per year wastewater reuse effluent would yield approximately 31,000 acre-feet of product water and 3,454 acre-feet of brine for evaporation and disposal.”<sup>123</sup>*

*This section (Section 2.1.1) contradicts the conclusion only 7800 (AF) of reuse is possible by 2060 and it is not listed as future supply. Therefore, UBWR used the wrong data in the Study Report.*

<sup>123</sup> PLP Study Report, p. 2-1 (emphasis added)

**UDWRe Response:**

**Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in the Water Needs Assessment. This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands. A decrease in anticipated indoor water use would likewise decrease potential reuse supply.**

**LPP Coalition Comment 2:**

*(Section 2.3.5, Page 2-10)*

**Forecasting Water Demand**

*“Total projected water demand was determined for the two Districts for the period from 2010 to 2060 by multiplying the projected population for each of the Districts by the projected total per capita water use with conservation. Separate culinary and secondary untreated water use demands were estimated to determine the potential secondary untreated supply that could be utilized by the Districts.”<sup>81</sup>*

*However, the Auditor found in its investigation of the UBWR that the agency’s data could not be relied on. The audit stated “the effectiveness of the division’s data verification process is also a concern because much of the submitted data is accepted at face value. The division reports that if a water system states that its data is accurate and appears reasonable, then the division has no other alternative than to accept that data. The problem with this approach is that inaccurate data can still be submitted. Another concern is that by verifying the data every five years, the division is unable to perform annual trend analysis, which would help in detecting inconsistencies in water use from year to year.”<sup>82</sup>*

*The Coalition illustrates just a few of the major errors in inaccurate data collection by UBWR on water use and supply in Washington County. They include:*

- *There are less expensive alternatives to gain 86,264 (AF) of water that are being ignored in the studies.*
- *If accurate water use and supplies were collected as recommended in the audit the Project would not be needed by 2024, or by 2060.*
- *Reports to Division of Water Rights are incomplete and are different than Division of Water Resources data on water supplies and use. Data is supposed to flow from Division of Water Rights to Division of Water Resources and the data does not match.*
- *Cities do not report the amount of secondary water they use. UBWR just adds 55 gpcd to per capita use. This artificially inflates water demand for the Project. The secondary water use is only an estimate and not validated.*
- *The 2000 baseline level in M & I reports of water use that is used for conservation savings is not validated and is incorrect.*
- *The 2011 Water Needs Assessment (WNA) and the WNA of 2015 have major conflicts of results regarding water demand. The 2011 report has far more conservation gains and lower water demand by 2060.*
- *UBWR only identifies existing water supplies as supplies that meet EPA drinking water standards thereby reducing the supply.*
- *Not all existing supplies or water rights are included as required in the Study Plan.*
- *There is no current or validated data on water supplies and use; the last M & I report was done in 2010 and the Auditor found the data flawed back to 2000.*
- *The last time UBWR’s Kanab Creek Virgin River Basin M & I water report was updated was 1993. (Audit, page 53)*
- *UBWR’s methodology in data collection hasn’t changed in thirty years and this inflates water demand.*
- *The current yield from existing projects has been reduced over the years and is detailed in our following comments.*

<sup>81</sup> Study Report, p. 2-10 (emphasis added)

<sup>82</sup> A Performance Audit of Projections of Utah’s Water Needs, Office of the Legislative Auditor General State of Utah (May 2015), available at <http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>

## **UDWRe Response:**

The 2015 legislative audit of the Utah Division of Water Resources (UDWRe) identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans. The stated interpretation of audit content is not clearly supported by the audit itself.

The 2015 Water Needs Assessment uses the most accurate and up-to-date data. Secondary use of 55 gpcd is not arbitrarily added to potable use. Each municipality is evaluated separately, and secondary use is estimated based on average irrigated area and metering data where available. Existing potable water supplies meet the EPA drinking water standards, but water that could be treated was included in future potable supplies (e.g. arsenic treatment of the Gunlock and Sand Hollow Wells). Secondary water is not required to meet EPA drinking water standards.

**LPP Coalition Comment 3:**  
(Section 2.4, Page 2-10)

**Water Supplies**

*“Water supplies that meet the EPA’s secondary untreated MCL for drinking water of TDS less than 500 mg/L are deemed usable for culinary purposes in this Assessment. The EPA’s secondary untreated MCLs are guidelines which address aesthetic concerns in culinary water, such as taste, color and odor.”<sup>84</sup>*

*All water rights and those that do not meet EPA drinking water standards in the county should be included in the Water Needs Assessment as existing and future supplies so decision makers can decide what future water supplies are really needed if the Project is not built. The Commission Staff should require full disclosure of all water resources in Washington County. Water treatment of the abundant lower quality water in the county could be a cheaper alternative to the Project.*

*UBWR varied from the Study Plan and must provide sufficient information about all existing and future water supplies and not reduce them every year. It must not narrow what is disclosed by only stating that the existing water supply is only culinary water that meets EPA standards for Drinking Water. The Commission Staff should require that all existing water supplies be included in the Study Report as required in the Study Plan (Section 19.2.2).*

<sup>84</sup> PLP, Study Report, p. 2-10, (emphasis added)

**UDWRe Response:**

**All reasonably available water supplies have been included in the study report. Refer to the response to Andrew Kramer Comment 5.**

**Lisa Rutherford and Paul Van Dam Comment 20:**

*Water Needs Assessment - Chapter 2 – Methodology 2.1 Introduction  
Service Areas (Page 2-1)*

*Because portions of the Districts' service areas are distant from the proposed LPP alignment, there may be economic and engineering limitations to supplying project water to all areas. However, indirect use of LPP water may be possible in some seemingly remote areas through exchanges and substitute supply agreements. As a result of these potential partnerships, the majority of each district's service area was evaluated in this assessment. WCWCD and KCWCD demands and water supply projects were evaluated independently.*

**COMMENT**

*Is the applicant using these remote "service areas" to bolster the demand and need for the pipeline water when the water may not even be economically viable and available to them? The applicant should be required to present more comprehensive details on this to FERC for consideration.*

**UDWRe Response:**

**These remote service areas contribute minimally to projected populations and water uses and, as stated, have water supplies which are considered to likely benefit indirectly through exchanges from the project. Areas which are unlikely to benefit, such as Enterprise in Washington County, were excluded from the analysis.**

**Lisa Rutherford and Paul Van Dam Comment 21:**

**2.2 Water Demand Forecast Methodology**

**2.2.1 Projecting Population (Page 2-5)**

*Because future population is dependent on birth rate, mortality, immigration, and emigration, each of which are affected by many factors, there is a high degree of uncertainty in population models, especially those projecting beyond just a few years. In **Figure 2-3** and **Figure 2-4**, ten historical population projections made by GOMB are plotted with actual population data estimated by the Census Bureau for Washington and Kane counties, respectively (GOMB 2005, GOMB 2008, GOMB 2012a, GOMB 2012b, & U.S. Census 2015). The GOMB projections have frequently underestimated, and in 2005 and 2008 overestimated population growth for Washington County.*

**COMMENT**

*Population projecting is challenging for the Applicant and Washington County, too. The WCWCD's publication *Water Line*, using an earlier WNA, showed the county's population for 2010 to be 159,880. In 1995 a WCWCD study projected that our 2010 population would be 138,760 and our 2020 population would be 234,560. We are currently around 152,000; growing to 234,560 in 2020 would be an 8.7% rate. Our current rate of around 2.9% would put us at 176,000 in 2020. Of fourteen population projections I've reviewed, eight from the state and/or county, the GOMB's "original" 2012 projection (179,396) comes very close. It certainly is not an underestimation, as the Applicant states. The 2005 Water Delivery Financing Task Force projection for 2020 (the document used to help justify the LPP) was 251,896 and would require a 10% growth rate from our current population.*

*Utah's Washington County requested that the Utah governor's office (GOMB) redo the 2012 population projections to remove the effects of the Great Recession and was the only county of Utah's 29 to make that request. 498,239 was the GOMB's first 2012 projection for Washington County's 2060 population before the requested revision was made and would have been a 2.6% growth rate.*

From Utah Office of Management and Budget, November 9, 2015 regarding my request for an explanation about the revision of the governor's 2012 population projections for Washington County:

*"After reviewing the preliminary results, the methodology in Washington County was adjusted to exclude the effects of the Great Recession. The result was a slightly faster rate of growth resulting in the 581,731.*

*Five County AOG requested this modification--specifically the phrase: "Washington County officials request that the final 2012 baseline projections be based on available NAICS data sets from 1990 to 2007." In the other 28 counties, the method included data thru 2010. More precisely, employment declines in 2009 and 2010 were excluded from the data used for the final projection of employment and population in Washington County, but included in the other 28 counties."*

*The 498,239 population projected for 2060 by the GOMB in 2012, pre-revision, would be a 2.6% growth rate over the next 45 years and seems in keeping with what we might see given the slowed growth rate in Washington County. Table 3-1 from the 2015 WNA has us reaching 468,990 in 2050 which would be a 3.2% growth rate over the next 35 years.*

**Table 3-1 WCWCD Population Projections**

City/District	Population					
	2010	2020	2030	2040	2050	2060
Hurricane	13,300	18,950	27,020	35,800	45,510	56,020
Irvin	6,410	9,130	13,020	17,250	21,930	27,000
La Verkin	4,060	5,780	8,250	10,930	13,890	17,100
Santa Clara	6,500	9,260	13,200	17,500	22,240	27,380
St. George	72,750	103,640	147,780	195,810	248,920	306,420
Washington	18,760	26,730	38,110	50,490	64,190	79,020
<b>WCWCD</b>	<b>138,530</b>	<b>196,480</b>	<b>279,270</b>	<b>369,370</b>	<b>468,990</b>	<b>576,850</b>
Annual Growth Rate	-	3.6%	3.6%	2.8%	2.4%	2.1%
Source: DWR 2014c.						

#### **UDWRe Response:**

##### **UDWRe Response:**

**The population projections utilized are from Utah's "Governor's Office of Management and Budget." These projections are used for planning purposes throughout the state.**

#### **Lisa Rutherford and Paul Van Dam Comment 22:**

##### **2.2.3 Estimating Per Capita Water Use (Page 2-8)**

*This Assessment reports all water use consistent with State of Utah policy, whereas communities in other states may eliminate commercial, institutional, industrial or secondary water use or subtract return flows before calculating water use.*

##### **COMMENT**

*It may be true that "some" other communities may eliminate CII, secondary or subtract return flows in calculating water use, but this is not universally true. As noted in an earlier comment, Albuquerque, New Mexico includes all user groups in their gpcd calculation.*

*From Albuquerque's 2024 Water Conservation Plan:*

*"...all uses of water residential, multi-family, commercial, industrial, institutional, non-revenue and reuse are accounted for in the Authority's GPCD calculation."*

*"The Water Authority now supplies about 102,000 acre-feet/year of water to more than 600,000 customers in the metropolitan area. Water is supplied from the aquifer, surface water and reuse."*

**UDWRe Response:**

**Please refer to the response to Lisa Rutherford and Paul Van Dam Comment 14 addressing gpcd comparisons with Albuquerque.**

**Lisa Rutherford and Paul Van Dam Comment 23:**

*(Page 2-8) DWRe separated 2010 water use estimates into residential, commercial, institutional and industrial use categories. Residential water use was further broken down by indoor and outdoor use. Secondary untreated water systems are not available in all areas, so many homes and businesses use culinary water to meet outdoor watering needs. Reliable use records are available for culinary water because cities meter and bill customers for this water. However, while some secondary untreated water use is metered, most is not; and therefore, DWRe estimated secondary untreated use using available meter and lot size data.*

**COMMENT**

*As we know from the May 2015 Utah legislative audit of the Division of Water Resources and the December 2014 Utah legislative audit of the Division of Drinking Water there is much room for improvement in the way water is metered and data collection that feeds into these figures. Until these two divisions resolve the problems noted in the 2014 and 2015 audits, all of this information is suspect and should not be used to justify an expensive project such as the pipeline. Even Utah's Governor Herbert advised that in his 2017 budget:*

*"As outlined in more detail in the Budget and Policy Brief on water, the state has many issues to address related to water and water infrastructure. With the U.S. Geological Survey indicating that Utah has the highest per capita water use in the nation, as citizens we must look at ways to use our existing water more efficiently."*

*"However, because of the very large cost estimates in the billions of dollars and out of respect to the state's taxpayers, such water projects should come after all other alternatives, including significantly more efficient use of existing water, are exhausted."*

*"In addition, minimum conditions prior to state involvement should include better water data and data reporting, establishing and achieving new and meaningful water conservation targets, independent review and validation of water pricing elasticity and repayment feasibility..." (emphasis added)*

*From May 2015 state audit of the Utah Division of Water Resources (Chapter 4):*

***Growth in Future Water Supply Should Be Reported to Policy Makers - Division***



***Projections Should Include Expected Local Water Development.***

*The division's projections of future water use do not include growth in the state's water supply beyond what was already developed in 2010, with a few exceptions. Those exceptions include the additional supply from a few new water projects. In contrast to division projections, Utah's developed water supply will grow incrementally as agricultural water becomes available for municipal use and as municipalities develop their remaining sources of supply. By excluding much of the growth in local water supplies, the division's projections accelerate the timeframe in which costly new water projects appear to be needed.*

***Good Basin Plans Should Be the Basis for Better Statewide Planning.***

*As with the statewide projections, most of the division's basin plans do not estimate the growth in the region's water supply. The basin plans also understate the amount of agriculture water available for municipal use. We recommend the division update its basin plans on a more regular basis. We also recommend that they estimate the incremental growth in supply that will occur as municipalities develop additional sources of water.*

**UDWRe Response:**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans.**

**Lisa Rutherford and Paul Van Dam Comment 24:**

***2.2.3 Factors Influencing Per Capita Use (Page 2-8)***

*Local climate, culture and economic makeup influence water consumption. The pioneer culture of home gardening has persevered over time. The warm climate in southwest Utah provides a long growing season for shade trees, home vegetable gardens and other landscaping. Precipitation is concentrated outside of much of the summer growing season. System demands in southwest Utah are increased by the growing season coupled with a high evapotranspiration (ETo) rate and minimal offsetting precipitation. Annual per capita water use data were analyzed to determine trends in water use considering net evapotranspiration data from Coral Canyon (DWRe 2013e) as an indicator of annual weather conditions.*

***COMMENT***

*Although the Applicant indicates that much of high per capita use in Washington County is driven by local customs, shade trees, gardening, long growing season and climate, the WCWCD's own information indicates that much of the water goes to lawns. Trees take much less and, in fact, are much more helpful with regard to providing shade for helping deal with the high temperatures in the area. With regard to the practice of home vegetable gardens, the December 2014 state audit of the Utah Division of Drinking Water sheds light on the over use of water outdoors.*

*"...research suggests that homeowners apply far more water to their yards than is necessary."*

*"As noted, the typical homeowner's outdoor water demand appears to exceed the division's source sizing standards."*



*“...homeowners tend to apply much more water than their yards need.”*

*“Because homeowners do not water their lawns and gardens efficiently, the actual amount of outdoor water used is far greater than the amount of water required by the source sizing standards.”*

*Regarding agricultural water conservation, according to the Bureau of Reclamation’s “Moving Forward 2015” report, “Water use per acre has remained relatively constant historically while productivity has increased Basinwide by about 25 percent since 1980.”*

*“The Local Waters Alternative to the Lake Powell Pipeline” published in 2013 by Western Resource Advocates provided a plan whereby conservation could be achieved and citizens of Washington County could still have pleasant landscaping using 55 gpcd which is completely achievable for many. Since our water usage is an average, some will use more and some less, but much of the new construction is moving to desert landscape that would easily accommodate this and people are already converting traditional landscaping to desert. This is far above the 10 gpcd outdoor that would result without the LPP according to the admonitions of the WCWCD.*

*Even Dennis Strong, former director of Utah’s Division of Water Resources (Applicant), spoke out in 2008 about the lack of need for the Lake Powell Pipeline water in this video: [https://www.youtube.com/watch?v=oY\\_KXDS6hbQ&feature=youtu.be](https://www.youtube.com/watch?v=oY_KXDS6hbQ&feature=youtu.be)*

*It appears that the residents of Washington County can have their shade trees and gardens if they learn to use water more wisely and require less lawns. It’s about “use” choices – not water or no water.*

**UDWRe Response:**

**Refer to the response at the end of Andrew Kramer Comment 5.**

**Lisa Rutherford and Paul Van Dam Comment 25:**

*(Page 2-9) Washington County has a large tourism population associated with conventions, golfing, athletic events, and visits to nearby national parks and recreation areas. Washington and Kane County share the world renowned Zion National Park. Kane County is a gateway to Lake Powell, Bryce Canyon, and the Grand Staircase-Escalante National Monument. Average annual tourist visits for the two counties exceed six million per year.*

**COMMENT**

*BOR’s “Moving Forward 2015” report identifies other areas that have high tourism (AZ, NV) that use less water than we do. For example, SNWA’s Water Conservation Plan 2014-2018 includes the following:*

*When calculating population, the SNWA does not include the approximately 40 million annual visitors to the region. This visitor load is equivalent to more than 465,000 additional people supported by the water system each day.*

**UDWRe Response:**

As previously explained, it is difficult to find relevant per capita usage and conservation goals comparisons due to differences in community dynamics, climate, and calculation methods. Per the cited example, Southern Nevada Water Authority (SNWA) discounts water that is returned to Lake Mead as wastewater from its per capita usage (see, [https://www.snwa.com/ws/recycled\\_returnflow.html](https://www.snwa.com/ws/recycled_returnflow.html)). The per capita usage estimates in the Water Needs Assessment are not discounted for return flows from wastewater, nor does the population used include the nearly 5.6 million visitors annually.

**Lisa Rutherford and Paul Van Dam Comment 26:**

*(Page 2-9) Second-home owners make up approximately 30 percent of Washington County's total parcels, and most second homes are within major city limits and could potentially be served by the LPP (Washington County Assessor 2015).*

**COMMENT**

*The 2011 Special Summer Edition of WCWCD Water Line indicated that Washington County's second homes made up approximately 27 percent of the homes. Perhaps housing construction has risen high enough to add the 3 percent, but other desert cities also have high numbers of second homes while using less water than we do.*

*If these 2<sup>nd</sup> homes are having an adverse effect on our area's water consumption, i.e., poor outdoor water management which accounts for a large portion of our area's water usage, then more pressure should be put on these people to conserve and manage better. If the district is focusing conservation on high water users, as noted in their most recent conservation plan, then they could also focus on these home owners by reviewing their water usage to see how in line or out of line it is.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 27:**

*(Page 2-9) The historical conservation achieved in the Districts' service areas has been based on water use data provided by DWRe (DWRe 2014c). Annual per capita water use data were analyzed to determine trends in water use. Future water conservation efforts were evaluated in a detailed water conservation study, conducted for each of the districts by Maddaus Water Management (Appendix B, MWM 2015a, MWM 2015b).*

**COMMENT**

*It is clear in the Maddaus Water Management conservation study that Washington County has a long way to go to achieve results that have already been achieved in other more conservation-oriented desert cities. With a 2000 water usage of 439 gpcd being the starting point, a 36% achievement results in 2010's 325 gpcd, which is not an admirable record compared to other locations. The differences in climate, growing season, economics and social norms of our area do not provide a decent argument to*

*support this poor performance.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 28:**

**2.3.5 Forecasting Water Demand (Page 2-10)**

*Total projected water demand was determined for the two Districts for the period from 2010 to 2060 by multiplying the projected population for each of the Districts by the projected total per capita water use with conservation. Separate culinary and secondary untreated water use demands were estimated to determine the potential secondary untreated supply that could be utilized by the Districts.*

**COMMENT**

*Because the water usage figures provided in the Maddaus Water Management's conservation study are so much higher than other desert areas, of course the forecast for future demand will be high. Ceres, an organization that has worked with a network of investors, companies and public interest groups for over 25 years, advises about using "demand projections" in water projects when advising clients about investing in water projects.*

*From Ceres report "Water Ripples – Expanding Risks for U.S. Water Providers":*

*"...designing water systems to reflect declining water demand will ultimately save consumers hundreds of billions of dollars that would otherwise be spent on unnecessary water diversion projects, reservoirs, treatment plants and pipelines built for a peak demand that is very unlikely to ever manifest."*

*"Seattle Public Utilities has been vocal in communicating how wrong they were in projecting future water demand, as demonstrated by the 100 million gallon a day difference between the demand projected for 2030 in planning exercises done in 1990 and 2007."*

*Also, details from "bonding" information presented at a Utah Water Users Workshop several years ago:*

**'PROTECTING BOND RATING' BY DAVID ROBERTSON**

*What rating agencies look at:*

- *System strength*
- *Capital facilities plans (funding needs)*
- *Fund balance*
- *Strength of administration*
- *Relationship between board and administration*
- *Ability to postpone "growth" related projects helps ease concerns*
- *Planning for future established upon actual data*

***!!RELIANCE ON IMPACT FEES IS FROWNED UPON!!***

***O&M COSTS THAT ACCELERATE TOO  
MUCH ARE FROWNED ON, ALSO. DEBT***

**SERVICE COVERAGE IS KEY TO  
MAINTAINING RATES.**

*Debt service coverage = “How much money you have to cover debt” (\$1.50 for each dollar of debt) If we manage well, better interest rates for district will result.*

*David Robertson: 801.596.0700 [david@lewisyoung.com](mailto:david@lewisyoung.com) [www.lewisyoung.com](http://www.lewisyoung.com)*

*Although the 2014 and 2015 Fitch ratings for Washington County sustained the county’s AA rating, Ceres provides the following:*

*“But in the end, a credit opinion is only meant to survey the landscape for the next few years—as the average holding period of a water-related bond for institutional investors is around eight years, the importance of freestanding credit analysis is evident.”*

*“As noted by both Fitch Ratings and Standard & Poor’s, water systems’ dependence on sales for discretionary purposes is a vulnerability when customers decide to cut back or are forced to by severe drought restrictions.”*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 29:**

**2.4 Water Supplies (Page 2-10)**

*The best estimate of reliable supply represents the approximate annual volume of water that is reliably available to meet peak demands, reported in the DWRe Water Use Projections (WCWCD 2014; DWRe 2014c). Reliable yield for future projects was based upon information provided by the Districts. Reliable yield for the Virgin River was based upon the Virgin River Daily Simulation Model prepared by DWRe 2014a.*

**COMMENT**

*The December 2014 Utah Legislative Audit of the Utah Division of Drinking Water (DDW) revealed that the “peak demand” requirements are questionable. The December 2014 DDW audit challenged the water sizing requirements that are used to plan water projects and determine water needed for indoor and outdoor usage. Basically, the DDW audit showed that the water system sizing requirements are too large for residential indoor use and too small for residential outdoor use. In fact, the indoor sizing is much too big. The outdoor use is too small but that’s based on actual usage which exceeds what should be used on outdoor landscape. People are overwatering so perhaps the sizing is not too small after all. If people were watering correctly, the sizing might be just fine, which takes us back to the indoor sizing which is too large. The sizing requirements have not been revised in 35 years. Here’s a quote from the December audit:*

*“Research shows that residential water use has declined during the past 30 years. Despite this decline, the state indoor source sizing requirements have not been updated in 35 years. While the division has periodically reviewed local water use data,*

*DDW staff were unable to provide documentation supporting the current standards. Consequently, the division has not updated the state indoor requirements to reflect reductions in indoor water use.”*

*Over the 35 years the source sizing requirements have not been changed while water use in the typical home has declined due to new technologies and other factors. The DDW has periodically “reviewed” local water use data to verify sizing requirements but determined there was insufficient data to support changing the requirements. This is important because it ties into the May 2015 legislative audit of the Division of Water Resources (DWR) which revealed that the data the DWR gets for their planning purposes are not accurate.*

**UDWRe Response:**

**The Division of Drinking Water sizing requirements were mentioned, but not used in calculations, in the Water Needs Assessment. Conservation goals were applied to per capita use estimates to project future demands out to 2060.**

**Lisa Rutherford and Paul Van Dam Comment 30:**

***2.4.3 Demand Timing (Page 2-12)***

*Without storage of potential wintertime secondary untreated supply, wastewater generated during winter months could not be utilized to meet secondary untreated demands.*

***COMMENT***

*Rather than planning to build a multi-billion dollar 139-mile pipeline, given the climate change predictions and the warnings provided by Ceres about excessive expenditures based on faulty demand projections, the Applicant should encourage Washington County to put more focus on “storage” opportunities. The state’s water audits also should provide impetus to the Applicant and WCWCD to focus their efforts locally.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 31:**

***2.6 Calculating Water Conservation (Page 2-15)***

*Information on the water conservation programs currently being implemented by the Districts and the cities within their service areas was obtained from published water conservation plans submitted to the DWRe and from interviews with water conservation coordinators and water resource planners at the various entities. No effort was made to field-verify the implementation of specific conservation measures described in the water conservation plans.*

*Projected conservation for the two districts was based on water conservation projections by the Utah Division of Water Resources (DWRe 2014c). Water conservation demand management alternatives, general and site-specific conservation programs, and other water efficiency measures targeted to achieve these projections were developed by Maddaus Water Management (MWM), in close cooperation with MWH and each District. Results of the conservation studies were compared to the State’s water conservation goals.*

### **COMMENT**

*As a citizen faced with the expense of repaying the multi-billion dollar LPP, it's troubling to read that "No effort was made to field-verify the implementation of specific conservation measures described in the water conservations plans" provided by the WCWCD and Washington County Cities but perhaps not surprising. Add to that the fact that "projected conservation for the two districts was based on water conservation projections by the Utah Division of Water Resources, which received a scathing audit in May 2015 from the Utah Legislative Auditor's office for poor practices and poor data, Applicant's conservation projections are not reliable. The conservation measures developed by Maddaus Water Management result in our area's 2060 gpcd usage (285 gpcd WITH conservation) 15 gpcd higher than what was reported by WCWCD in 2013 (270 gpcd)! Applicant should be required to redo the conservation projections in light of what Washington County's current actual use is not using a 2000 figure of 439 gpcd. Using the higher figure may be in line with the state's conservation goal, but it does not reflect reality. 175.5 gpcd would be our 2060 achievement if the 35% conservation goal were applied to the 2013 270 gpcd. 534,364 Washington County residents could be supported on the 105,000 acre feet per year promised by our water manager, WITHOUT the LPP. One has to assume that when the water manager said he could provide 105,000 afy reliable yield, he had factored in a planning reserve. FERC should demand a review of the water conservation calculations provided by Applicant to better reflect reality.*

### **UDWRe Response:**

**The 270 gpcd only includes potable use. Adding 55 gpcd secondary use results in 325 gpcd total use in 2010. Without aggressive conservation, the projected 2060 population cannot be supported by 105,000 acre-feet per year of water supplies, and that supply estimate was adjusted downward in the 2015 Water Needs Assessment (WNA), primarily because it double-counted some secondary supplies and the yield of the future Ash Creek Project was decreased upon additional study.**

**The 2015 legislative audit of the Utah Division of Water Resources identified opportunities to improve water supply and usage data gathering by the Utah Division of Water Rights, and analysis by UDWRe. The audit focused on statewide and regional planning. The project planning processes for this project go into far more detail than statewide or regional plans. The stated interpretation of audit content is not clearly supported by the audit itself.**

### **Lisa Rutherford and Paul Van Dam Comment 32:**

*(Page 2-16) The studies included collecting billing data to analyze actual water use at the customer level; selecting potential conservation measures suitable for the community; combining selected measures into comprehensive water conservation programs; and coordinating with the communities in the selection of conservation measures likely to succeed in this area and the overall desired program. MWM's Demand Side Management Least Cost Planning Decision Support System (DSS Model) prepares long-range water demand and conservation water savings projections.*

### **COMMENT**

*It seems incomprehensible that the level of review noted above was really done. If so, how can the usage documented in the Maddaus/MWH August 2015 Technical Conservation Analysis (Table 5-4) show a projected range of 304 gpcd to 317 gpcd for 2020 when our*



*“actual” usage was 270 gpcd reported by the WCWCD? The baseline number of 439 gpcd in 2000 is driving their projections with little or no real attention paid to billing data. Applicant should be required to redo the conservation projection figures based on “reality.” Just because the State of Utah has a conservation goal set, that should not refrain FERC from demanding more from Applicants. FERC should not be held to the State of Utah’s requirements.*

**UDWRe Response:**

**As noted in response to previous comments, 270 gpcd only includes potable use. Adding 55 gpcd secondary use results in 325 gpcd total use in 2010.**

**Lisa Rutherford and Paul Van Dam Comment 33:**

**2.6.1 Demand Hardening**

*(Page 2-16) Water providers currently rely on demand management – or emerging conservation measures – to get through drought periods when water supplies are well below normal. When conservation measures have consistently reduced water use to the point it has become “normal” use, there are fewer short term options for reducing non-essential uses to save water for essential uses. This decrease in flexibility of water use is referred to as “demand hardening.” Demand hardening requires that reliable yield estimates are factored to meet all projected demands, because there is little potential to reduce demands when actual yields are less than the estimated yield. The 10 percent shortage factor for surface water and the 50 percent of maximum for groundwater was assumed adequate to accommodate demand hardening.*

**COMMENT**

*The Applicant and WCWCD continually use “demand hardening” as an excuse for needing the LPP water in spite of the fact that sometime in their children and grandchildren’s futures they will get to the end of the LPP water and will deal with “demand hardening” themselves. That said, demand hardening can be managed as evidenced by a report from the Alliance for Water Efficiency (AWE), “An Assessment of Increasing Water-Use Efficiency on Demand Hardening” (July 29, 2015) which states:*

*This report’s overall message is that water suppliers will probably find themselves on a continuum with respect to demand hardening concerns, but these concerns can be managed, and the correct arena for managing these concerns is through the design of appropriate water shortage contingency plans with built-in effective enforcement mechanisms which should be regularly updated to favor curtailment strategies that both minimize economic costs and are consistent with the changing mix of discretionary and non-discretionary uses of water. Even when savings from water-use efficiency programs are used to supply new growth, a service area is not likely to lose its “ability” to respond to shortage emergencies.*

*Additionally, it’s important to note that the BOR’s “Moving Forward 2015” report indicated that “...since 2000, M&I water use has either remained stable or decreased for many metropolitan areas receiving Colorado River water, despite increases in population.” Given that AWE feels water hardening can be managed and BOR’s report indicates growth has occurred with less water, the Applicant’s concerns seem without much merit as rationale for FERC’s approval of the LPP. In addition, the study reports show that Washington County has 106,000 acre feet in the Sand Hollow aquifer that they would use to cover droughts or shortage.*



**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 34:**

***2.7 Integrated Water Resources Plans (Page 2-17)***

*The rate at which urban development occurs in areas of existing irrigated agriculture will affect the rate at which agricultural supplies are converted to M&I supplies without buy and dry programs. This in turn could affect the timing of other new supplies including LPP.*

**COMMENT**

*Agricultural conversion in Washington County has already happened at an astonishing rate as shown by Utah's Division of Water Resources director Eric Millis at a past Utah Water Users Workshop in St. George. His presentation showed that from 1990 to 2010 the agricultural conversion was extensive. There is no reason to feel that it will not continue. In fact, in my city of Ivins, agricultural conversion is happening again at a rapid rate. As this water is added to the system, and as people conserve more, the need for LPP water will be lessened and provides additional reason for FERC to not approve this license. With approximately 60,000 afy of irrigation water coming to Washington County, water that has not been included in our county's "potential" water – other than about 10,080 afy future water shown in study reports – this water will provide for much growth without the LPP.*

**UDWRe Response:**

**Agricultural conversion in Utah occurs on a free-market basis, and will supply some water as the land is developed for other purposes; however, water entities must work within current Utah water rights law protecting water right owners as supplies are transferred, conserved and developed to meet future demands.**

**Lisa Rutherford and Paul Van Dam Comment 35:**

*(Page 2-17) Advanced water treatment processes (e.g., reverse osmosis) are currently financially and environmentally prohibitive to provide culinary water from local surface waters. Technological breakthroughs in treatment processes or brine disposal methods could make advanced water treatment feasible for southwestern Utah in the future may allow use of some secondary untreated water resources currently planned to offset culinary demand available for direct culinary use.*

**COMMENT**

*Costs for treatment are improving and, given the wasteful use of water in Washington County currently, treatment to provide additional water should not be required anytime soon. If conservation measure were stepped up, much treatment could be delayed or even eliminated. Tons of salt are added to the water stream by domestic water softeners, making the water only marginally useful and yet the conservation plans shown in the August 2015 Maddaus "Conservation Technical Analysis" do not address dealing with this issue.*

**UDWRe Response:**

**Lisa Rutherford and Paul Van Dam Comment 36:**

(Page 2-17) *The economic composition of each district is likely to change as population increases thus varying the residential to CII usage ratio. As cities grow, commercial, industrial and institutional uses often increase. It is likely that southwest Utah will remain a popular location for second homes and tourism, but it is unknown if either component will increase as more and more baby boomers retire or taper off as the area becomes more populated. (Emphasis added.)*

**COMMENT**

*This is an interesting comment: As cities grow, commercial, industrial and institutional uses often increase. It's interesting because WCWCD manager Ron Thompson has repeatedly commented in meetings when Washington County's high 47% CII figure is noted that "the CII% will diminish as the population increases." So, there seems to be a discrepancy between what the Applicant is stating and what our own water managers asserts. In fact, areas such as Albuquerque which support over 600,000 people on 148 gpcd have a CII of 20% (29 gpcd of 148 gpcd total) or 32% if their multi-family usage is included. So, that larger area's CII percent is much better than ours and gives one hope that our CII will improve.*

*Our water district's CII percent of 47% is significantly higher than other desert cities. When one reviews the Maddaus 2015 "Conservation Technical Analysis" Figure 3-1 "Consumption by User Group" shows CII percent at 46% (Commercial 23%, Institutional 6% and Secondary 17%). The notes below the pie chart read "Secondary Use includes untreated water for outdoor irrigation use for residential single family, multifamily, second-home, commercial, industrial, and institutional customer categories" and "Figure is based on 2010 water use date." Given that the WCWCD's own publication "Water Line Winter 2009" has a pie chart showing CII at 47%, we should assume that the 17% of secondary water in the Maddaus pie chart is actually CII, so one should not assume that the Maddaus 6% Institutional and 23% Commercial – total of 29% - indicates improvement in our CII usage.*

*Figure 3-2 shown in the WCWCD's Water Conservation Plan on their website (updated December 2015), Page 12, shows the district's CII usage at 39%. However, if the Secondary usage on the chart 17% is added to that, the total comes to 56%. As noted in the above paragraph dealing with the Maddaus report, their chart shows Secondary at 17% and is clearly part of the district's CII usage. Notes that accompany the WCWCD's Water Conservation Plan state:*

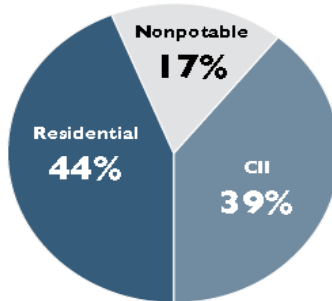
- 1. Figure is based on 2010 water use data.*
- 2. Secondary use includes untreated water for outdoor irrigation use for residential single family, multifamily, second-home, commercial, industrial, and institutional customer categories.*

*These are the same as notes provided in the Maddaus analysis and yet the charts in both reports differ:*

Report	Single Family	Multifamily	Commercial	Institutional	Secondary	Non Potable	Total
Maddaus 2015 Cons Tech	49%	5%	23%	6%	17%	0%	100%

Totaled from above	54%	46%		100%
	Residential	CII	Non potable	
WCWCD 2015 Cons Plan	44%	39%	17%	100%

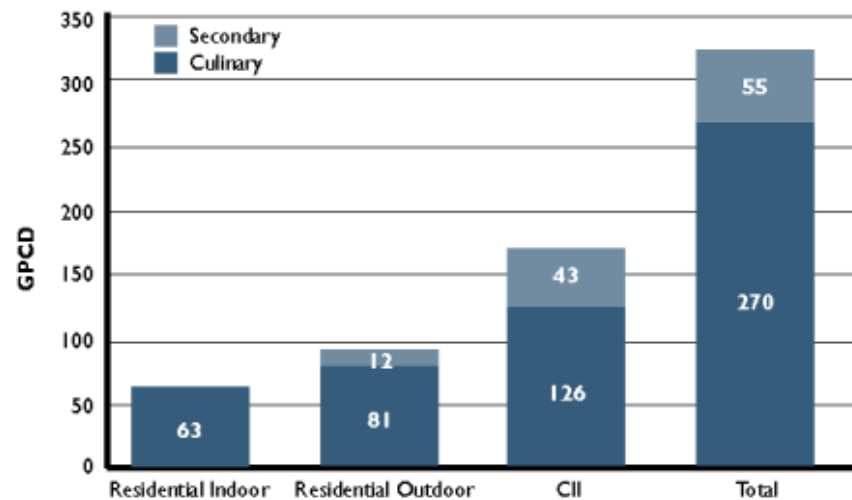
**Figure 3-2: 2010 Water Consumption by user group**



Notes:  
1. Figure is based on 2010 water use data.  
2. Secondary use includes untreated water for outdoor irrigation use for residential single family, multifamily, second-home, commercial, industrial and institutional customer categories.  
3. Non-revenue water is not included in this figure.

*Additionally, this chart from the WCWCD’s “Water Conservation Plan” (Dec. 2015) – same as Figure 3-1 (page 3-2) in the WNA – adds to the confusion by showing CII at 43 (secondary) and 126 (culinary), which comes to 169 or 52% of the total 325 gpcd. This is off from the 46% and 39% shown in table above, and even “rounding numbers” (as noted in comment below the chart) doesn’t make up the difference.*

**Figure 3-1. 2010 Gallons Per Capita Per Day (GPCD) Water Use\***



\*Due to rounding, numbers may not add up to numbers cited in text.

*I feel that FERC should challenge the figures that the Applicant provides since there is much discrepancy between the figures shown in various documents and should be addressed. All figures apparently represent 2010 usage and, yet, are not in line. What other figures in their studies are in error? This points to the assertions made in the audit of Utah’s Division of Water Resources and the inaccuracy of the data.*

*For comparison to Washington County's CII usage, from BOR's "Moving Forward 2015" report:*

*The Central Arizona metropolitan areas has the highest percentage of CII use of any of the metropolitan areas analyzed. The recent 5-year annual average (2008-2012) period indicates that the residential water use accounts for about 60 percent of the total water delivered in this area, while the CII water use represents about 30 percent of the total water use. The residential and CII water uses have actually decreased by more than 2 percent compared to 1990 (5-year annual average, 1988-1992), while the CII sector has decreased by more than 5 percent (as a percentage of overall use) over the same period.*

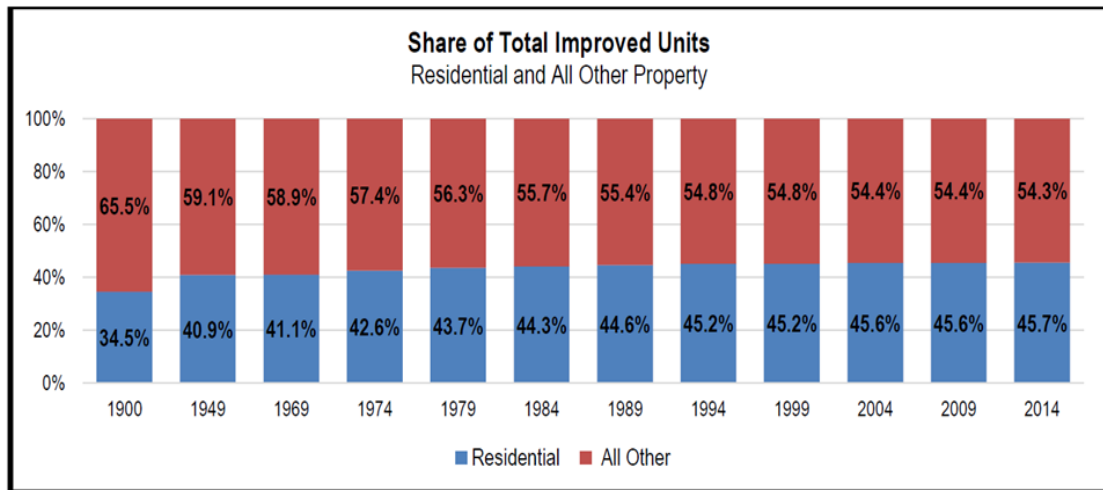
*Again from BOR's "Moving Forward 2015" report:*

*The recent 5-year annual average (2008-2012) period indicates that the residential water use accounts for about 56 percent of the total water delivered by SNWA. Within residential water use, the use by single-family housing represented about 45 percent in 2012. The CII water use category represents about 26 percent of the total water use, of which 7 percent corresponds to water use by the resort industry. Gaming and tourism are the major Las Vegas sources of employment and the historical drivers for the economy with annual visitor volume in Las Vegas of nearly 40 million. The use for irrigation represents 12 percent of total water delivered for use by common areas and golf courses. Golf course use represents 6 percent of water deliveries.*

*As for Washington County being a popular location for second homes and tourism, we know that the county's population will continue to grow, but its growth has diminished greatly from the 1990s and 2000s. Already, when one goes on line to find popular retirement locations, St. George is no longer on the list of many, if not most, sites. As for tourism, Zion Park will continue to be a draw, but already the park and nearby towns have reached "carrying capacity" and without significant management improvement, visitors may decide to spend their time and dollars elsewhere.*

#### **UDWRe Response:**

**An analysis of development in Washington County was performed in 2014 to determine if there was a shift in residential to other forms of development including commercial, industrial, agricultural, etc. More than 60,000 parcel records from the Washington County Assessor's master file were used to evaluate the nature and timing of development activity from 1859 (earliest record available) to 2014. The 1900 column below represents all development within the construction years from 1859 to 1900. Although residential development represented 34.5 percent of the county's improved property in 1900, it gradually increased and flattened out at about 45 percent in 1994 and remains at that level today. This data would tend to suggest that development patterns have varied within a tight range during the past two decades and is likely to continue.**



Comparing Washington County's (a county) to Albuquerque's (a municipality) water use without consideration of water use accounting practices, population dynamics, climate, etc. is void of merit.

According to the 2016 Water Needs Assessment, which we believe to be the most accurate current data available, CII use in Washington County in 2010 was 126 gpcd (culinary) and 43 gpcd (secondary). This represents 46 percent of culinary water use, 78 percent of secondary water use and 52 percent of total use. This information is consistent with what was reported in the 2015 Water Conservation Plan.

The percentage of water use attributed to CII use is not a good metric for conservation progress. A decrease in percentage of CII use could mean a number of things that do not necessarily correlate with increased water efficiency in that sector.

**Lisa Rutherford and Paul Van Dam Comment 37:**

### ***2.8 Coordination with Local Stakeholders (Page 2-17)***

*For the conservation assessment performed by MWM (MWM 2010a, MWM 2010b, MWM 2015a, MWM 2015b), meetings were conducted to collect water use and reuse data and existing conservation program information.*

*MWM presented several potential conservation measures that could be considered for implementation in each community and the stakeholders screened the potential conservation measures to a short list of specific conservation measures that were further evaluated in the conservation assessment. The conservation coordinators and water resource planners for each entity selected the preferred conservation program in a workshop with MWM.*

### **COMMENT**

*The Maddaus conservation group was made up of mostly people who challenge making any significant conservation changes in our community or mandating any changes. There was only one member of the group from a conservation organization who would voice opposition to the Lake Powell Pipeline and suggest conservation options that might have greater success.*

**UDWRe Response:**

**Your comment has been noted.**

**Chapter 3 Comments:**

**LPP Coalition Comment 1:**

*(Section 3.2.1, Page 3-2)*

**WCWCD 2010 Per Capita Water Use**

*“In 2010 the per capita water use in the WCWCD service area was estimated to be 325 gpcd. Figure 3-1 above shows that 270 gpcd was culinary water and 55 gpcd was secondary untreated water. Residential use contributed 156 gpcd, and commercial, institutional and industrial (CII) use contributed 169 gpcd. CII includes use from second homes.”*

*UBWR explains the problem of not having accurate data on secondary water use below.*

*(Note: See LPP Coalition Comment 2 – Chapter 4 (UBWR))*

**UDWRe Response:**

**Refer to the response to LPP Coalition Comment 2 in the Study Report 19 – Water Needs Assessment Chapter 4 Comments section.**

**LPP Coalition Comment 2:**

*(Section 3.3.1, Page 3-4)*

**Required Source-Sizing Standards**

*“Per capita water use is anticipated to decline resulting from increased conservation, but ultimately, the quantity of water municipalities must be capable of providing their customers is dictated by design standards for source sizing. Utah Division of Drinking Water (DDW) requires sources to meet both average and peak day demands (DDW citation, R309-510). A minimum of 0.45 ac-ft per year of source water is required per equivalent residential connection (ERC) statewide to meet indoor demands. The ERC could influence the demand needs in the future as the requirement may be more than the per capita use after conservation measures have been taken.”<sup>92</sup>*

*However, another legislative audit questions the logic of this rule of .45 (AF) per home Drinking Water’s Minimum Source Sizing Requirement because these regulations have not been updated in thirty years.<sup>93</sup> The cities misinterpret the rule that increases water demand and are requiring too much storage costing them more money for unnecessary infrastructure. The Water District has been using .89 (AF) per home for water demand and so have other cities which artificially inflate water demand.*

*The audit found current requirements were out of date:*

- indoor source sizing requirements appear outdated and lack supporting data*
- average day indoor standard appears excessive*



- peak day indoor standard appears excessive

*For instance the City of St. George misinterprets the rule and requires a large amount of water (1,487 gpcd per home) be held in storage, which in turn increases water demand artificially.*<sup>94</sup>

Indoor storage: 400 gpcd  
 Outdoor storage: 480 gpcd  
 Emergency storage: 540 gpcd (established by staff)  
 1,487 gpcd per home is very high

<sup>92</sup> PLP, *Water Needs Assessment*, p. 3-4

<sup>93</sup> A Review of the Division of Drinking Water's Minimum Source Sizing Requirement, Dec 2014, Office of the Legislative Auditor General State of Utah. See at: [http://le.utah.gov/audit/14\\_13rpt.pdf](http://le.utah.gov/audit/14_13rpt.pdf)

<sup>94</sup> *St George City Impact fee Facilities Plan and Impact Fee Analysis*, June 2014, Lewis and Young, Roberson & Burningham

#### UDWRe Response:

**The Division of Drinking Water sizing requirements were mentioned, but not used in calculations, in the Water Needs Assessment. Conservation goals were applied to per capita use estimates to project future demands out to 2060.**

#### LPP Coalition Comment 3:

(Section 3.3.1, Page 3-4)

#### Required Source-Sizing Standards

*UBWR submitted into the record totally different information on water supplies in the Water Needs Assessment (WNA) in 2011 and in WNA 2015. Water supplies have gone down since 2008 reporting by 16,233 (AF).*

Figure 11. Water Needs Assessments 2008, 2011, 2015

Year WNA	Existing reliable supplies (AF) Culinary & secondary Washington County	Population	gpcd
2015 <sup>95</sup>	67,677	<sup>1</sup> 167,439	
2011 <sup>96</sup>	83,910		<sup>2</sup> 294
2008 <sup>97</sup>	83,910		<sup>3</sup> 328

- <sup>1</sup> Study Report 10, 2015, page 4-2
- <sup>2</sup> Further, the 2011 Water Needs Assessment's water demand forecast for a population of 559,670, using as a baseline 294 gpcd (average of the six largest cities), with 14% conservation savings by 2060 and was only 254 gpcd, with a demand of only 159,400 ac ft. In the 2015 WNA 325 gpcd for 2010, page 3-2
- <sup>3</sup> Water Needs Assessment of 2008, used 2005 data for gpcd

*The charts above show the Reliable Potable Water Supply. It is defined by UBWR "as the annual volume within the maximum developed water supply that is available to meet peak demands. This is generally calculated as 100% of the maximum supply from surface water sources, 50% of the maximum yield of wells, and between 50% and 100% of the average annual spring flows. When*



*this number is divided by the average per capita usage, the resulting number represents the theoretical maximum population that the water source can serve.”<sup>98</sup>*

<sup>95</sup> DWR Water Needs Assessment, 2015, page 4-12

<sup>96</sup> DWR Water Needs Assessment, 2011, page 6

<sup>97</sup> DWR Water Needs Assessment, PAD, 2008, page ES-8

<sup>98</sup> DWR M & I, 2009, page 17, See at:

[http://www.water.utah.gov/M&I/PDF/KanabVirgin/09KCVR\\_M&I\\_2005.pdf](http://www.water.utah.gov/M&I/PDF/KanabVirgin/09KCVR_M&I_2005.pdf)

**UDWRe Response:**

2009 water use data was utilized for the 2011 draft Water Needs Assessment. A more detailed 2010 assessment was completed after it was published. That data showed less water delivered to customers within the Washington County systems. However, the detailed 2010 water data also had the added benefit of the new 2010 census population data, released around 2012. When dividing by the new (lower) official 2010 census population data, the per capita use increased because the population showed some 20,000 less people (this being within the recession years). In summary, the 2015 Water Needs Assessment has the benefit of better water use and population data.

**LPP Coalition Comment 4:**

*(Section 3.3.1, Page 3-4)*

**Required Source-Sizing Standards**

*The charts below show the difference in the Water Needs Assessments and how water supplies have gone down over the years. Supplies have been lowered or deleted in the 2015 Water Needs Assessment. In addition, UBWR in the 2015 WNA is only disclosing water supply that meets EPA’s standard for drinking water in an effort to show the pipeline is needed by 2024.*

**Figure 12. Culinary Existing and Future Water Supplies WCWCD**

	Estimated 2015 Reliable yield ac ft yr
Quail Creek and Sand Hollow Reservoirs	24,900
Sand Hollow aquifer	4,000
Cottam well field	875
Kayenta Water system	250
Crystal Creek Pipeline	2,000
Total	32,047 ac ft

2015 WNA, page 4-4.

	Estimated 2011 Reliable yield ac ft yr 2060
Quail Creek and Sand Hollow Reservoirs	22, 590
Sand Hollow aquifer	3,000
Cottam well field	2,000
Kolob Reservoir	2,000
Meadow Hollow Reservoir	200
Sullivan Well Field	750
Kayenta Water system	1000
Crystal Creek Pipeline	2,000
Ash Creek Pipeline	3,830
Total	37,398 ac ft

2011 WNA, page 6-4.

	Estimated 2008 Reliable yield ac ft yr 2060	
Quail Creek and Sand Hollow Reservoirs	29,500	
Sand Hollow aquifer	8,000	
Cottam well field	2,000	
Kolob Reservoir	2,000	
Meadow Hollow Reservoir	200	
Kayenta Water system	1000	
Sullivan Well Field	750	
Gunlock pipeline	Secondary (future treated culinary)	2,500
Total	43,450 ac ft	2,500

2008 WNA, page 4-9.

	Future supplies
Ash Creek Pipeline	5,000
Future Waste water reuse	16,700 (current capacity WNA 2015, 7,300)

2008 WNA, page 19.

#### **UDWRe Response:**

**Water supplies were thoroughly examined, and the most up-to-date, accurate yields were included in the 2015 Water Needs Assessment (WNA). The yields of some supplies were reduced to reflect actual yield with a proportional increase in future supplies to fully**

utilize water rights. While only supplies meeting the EPA standards for drinking water were included in potable supplies, supplies that could meet standards with treatment were included in future supplies (e.g. Sand Hollow aquifer and Westside arsenic treatment). Supplies meeting secondary water quality standards were included as secondary supplies. Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in the 2015 WNA. This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands. A decrease in anticipated indoor water use would likewise decrease potential reuse supply.

Reasons for specific supply changes are described below:

Project	Reasons for changes
Quail Creek and Sand Hollow Reservoirs	Additional modeling completed to determine reliable yield. Crystal Creek yield included in 2008 WNA and segregated in 2011 and 2015. Kolob Reservoir and Meadow Hollow added to system yield in 2015 WNA.
Sand Hollow aquifer	Current system capacity is limited by pipeline and water quality standards. Additional potential yield after well field, pipeline expansion and arsenic treatment was added to future projects.
Cottam Well	Updated to reflect existing yield. Additional yield added to future projects.
Kolob Reservoir	Added to yield of Quail Creek and Sand Hollow System.
Meadow Hollow Reservoir	Added to yield of Quail Creek and Sand Hollow System.
Kayenta Water system	Updated to reflect existing yield. Additional yield added to future projects.
Sullivan Well Field	Entire yield added to future projects as wells are currently not equipped to deliver water.
Gunlock Pipeline	Removed because M&I use was being double counted by also being included in Ivins, Santa Clara, and St. George's secondary supplies.
Ash Creek Project	Yield of the future project was decreased upon additional study.

**LPP Coalition Comment 5:**

(Section 3.3.1, Page 3-4)

**Required Source-Sizing Standards**

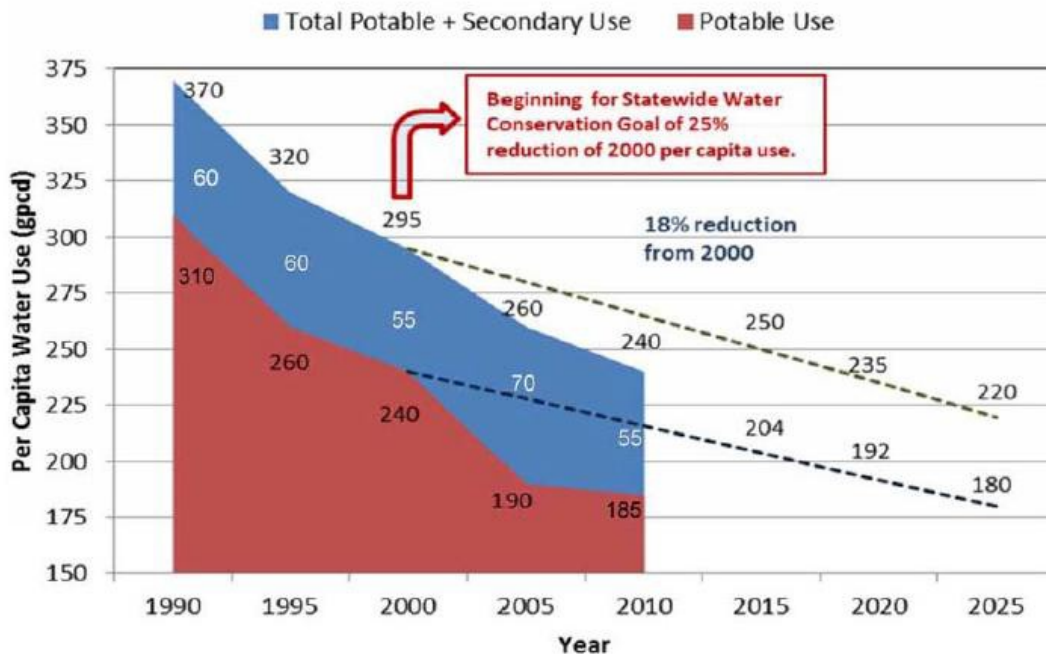
*UBWR's data submitted on existing and future water supplies in the Water Needs Assessments is contradictory; therefore, the Commission Staff should require validated data be submitted to the record before the EIS process begins.*

Further, UBWR's reports overestimate secondary water in Washington County in the Water Needs Assessment (WNA). UBWR describes how they estimate secondary water in their M & I water Plans. For example, "Reliable secondary water supply is defined to be equal to the secondary use determined for each community system."<sup>99</sup> This same wording is also found in DWR's 2002 M & I report, on page 10.<sup>100</sup>

The Auditor's report explained its concerns with the accuracy of accounting for secondary water statewide by referring to this chart below (Figure 13).

**Figure 13. Utah's Water Use Since 1990<sup>101</sup>**

**Utah's Water Use Since 1990.** Volatility in the reported secondary water use raises doubts about the comparability of past water studies. It also raises questions about the accuracy of the report that water use has declined by 18 percent from 2000.

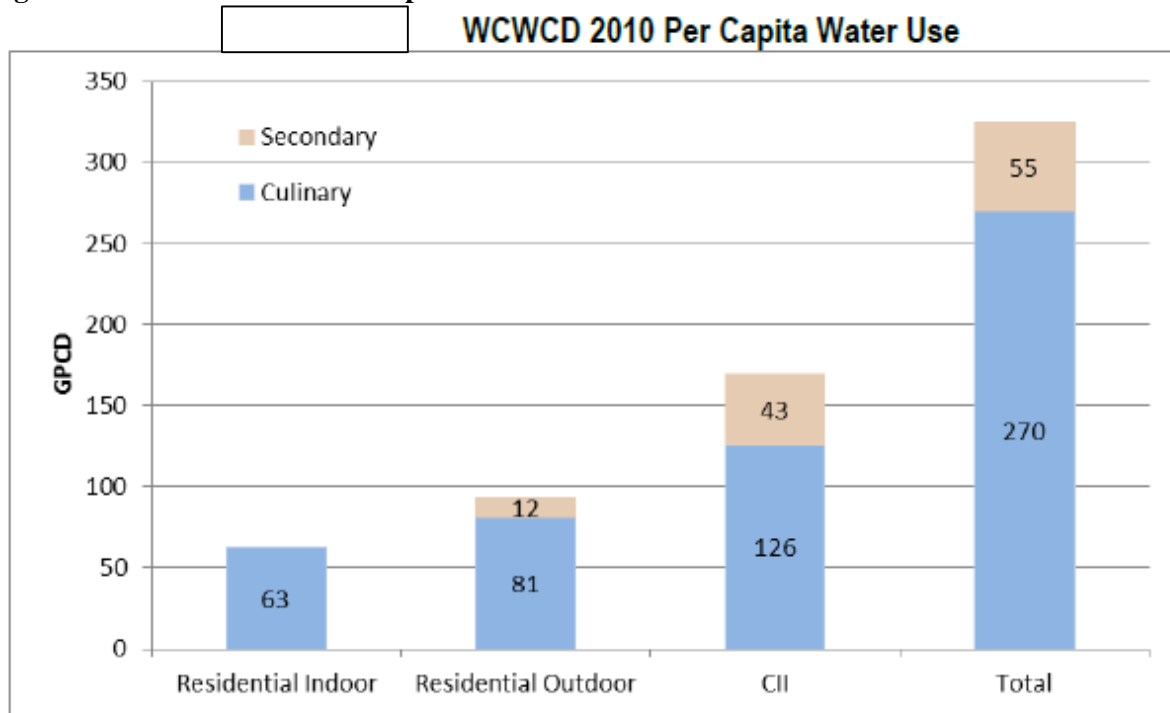


Source: Division of Water Resources

The Auditors report also shows the problem with UBWR adding on 55 gpcd as a standard for secondary water without justification throughout the state.<sup>102</sup> They wrote, "volatility in the reported secondary water use raises doubts about the comparability of past water studies. It also raises questions about the accuracy of the report that water use has declined by 18 percent from 2000. The Division of Water Resources Figure 13 shows large fluctuations in secondary water use (shown in blue) during 2000, 2005, and 2010. It shows secondary water use in 2000 was 55 gpcd. This is the difference between year 2000's total water use of 293 gpcd and the potable use of 240 gpcd. In 2005, that reported secondary water use rose to 70 gpcd. Then it declined to 55 gpcd in 2010. These swings in the reported use are explained, in part, by the use of different methods to estimate secondary water use."<sup>103</sup>

The Auditor's report continues, "... deliveries of non-potable (secondary water) are an important component of water use with the boundaries of public community water systems. However, quantifying the available supply is difficult. In Utah, many of the secondary water systems are part of a larger agricultural irrigation system. Hence, the theoretical supply includes both agriculture and M & I water. Currently, separating M & I secondary from agriculture is mostly estimated, due to the lack of and/or absence of metering, particularly at the level of individual property connections. For planning purposes, the DWR assumes that the supply for M & I secondary irrigation is simple equal to current use."<sup>104</sup>

**Figure 14. WCWCD 2010 Per Capita Water Use<sup>105</sup>**



<sup>99</sup> Division of Water resource Municipal and Industrial Water supply and Uses in the Kanab Creek/Virgin River Basin , July 2006

<sup>100</sup> Ibid, M & I report 2002, p 10

<sup>101</sup> Source Figure13. The Performance Audit of Projections of Utah's Water Needs, May 2015 Office of the Legislative Auditor General, State of Utah, Chapter II Reliability of Water Use Data Needs to Improve, p. 23.

<sup>102</sup> State of Utah Municipal and Industrial Water Supply and Use Study Summary 2010, page xvi, The total, 185 is potable and 55 gpcd is non-potable.

<sup>103</sup> A Performance Audit of Projections of Utah's Water Needs, May 2015 Office of the Legislative Auditor General, State of Utah, Chapter II Reliability of Water Use Data Needs to Improve, page 25. See at:

<http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit-water-5-5-15.pdf>

<sup>104</sup> Division of Water resource Municipal and Industrial Water supply and Uses in the Kanab Creek/Virgin River 2008, pp. 10-12

<sup>105</sup> This chart above, Figure 14, Page 3-2 WNA, shows how the extra 55 gpcd is added to per capita use in Washington County that overstates water demand. The per capita use is explained by UBWR (below elsewhere – see LPP Coalition Comment 1 – Chapter 3 (UBWR))

**UDWRe Response:**

2009 water use data was utilized for the 2011 draft Water Needs Assessment. A more detailed 2010 assessment was completed after it was published. That data showed less water delivered to customers within the Washington County systems. However, the detailed 2010 water data also had the added benefit of the new 2010 census population data, released around 2012. When dividing by the new (lower) official 2010 census population data, the per capita use increased because the population showed some 20,000 less people (this being within the recession years). In summary, the 2015 Water Needs Assessment has the benefit of better water use and population data.

**Lisa Rutherford and Paul Van Dam Comment 38:**

*Water Needs Assessment - Chapter 3 – Water Demand*

**3.1 Introduction** (~~Page 2-19~~) [Page 3-1 (UBWR)]

*As southwestern Utah's population steadily continues to grow, demand for water will consequently increase, approaching an estimated 200,000 acre-feet per year by 2060 in LPP service areas. Increased conservation efforts are expected to reduce per capita usage, but both districts must be capable of supplying enough water to meet Utah design standards for source sizing.*

**COMMENT**

*The assertion that growth will require an estimated 200,000 afy is only justified by high usage. I have referenced what other areas do with much less water using attainable and reasonable conservation in my earlier comments. 200,000 afy for the projected 2060 population of 576,850 would mean they would be using 310 gpcd, not the 285 gpcd projected, which is still much higher than FERC should accept.*

<i>POP</i>	<i>AFY</i>	<i>GALS</i>	<i>GALS/DAY</i>	<i>gpcd</i>
576,850	200,000	65,200,000,000	178,630,137	309.66

**UDWRe Response:**

The anticipated demand of 200,000 acre-feet per year is described as approximate and is for both Washington and Kane counties. WCWCD's individual, projected demand in 2060 is denoted in Table 3-3 as 184,250 acre-feet per year.

The validity of water use comparisons between different communities has been addressed in previous comment responses.

**Lisa Rutherford and Paul Van Dam Comment 39:**

**3.1.1 WCWCD Projected Population** (~~Page 2-19~~) [Page 3-1 (UBWR)]

*The average annual growth rate in Washington County is projected to be 3.6 percent until 2030 when it is expected to gradually decrease. By 2060, WCWCD's service population is anticipated to exceed 575,000. Population projections for WCWCD and the six largest cities in their service area are shown in Table 3-1.*

**COMMENT**



*Already WC growth rate is down around 2.9. So, we are already below where Applicant projected we would be. 251,896 was the projected population for 2020 by the 2005 Water Delivery Financing Task Force report, the report that led to passage of the 2006 Lake Powell Pipeline Act. That would have been an 11% growth rate from our 2015 152,000 population! WNA's Table 3-1 projected 2020 population for WC of 196,480 would be a 5% increase from our current 152,000 – far above our current 2.9% growth rate.*

**UDWRe Response:**

**The 2015 WNA used the most recent population projections developed by the Utah Governor's Office of Management and Budget. These rates project average growth each decade until 2060. Growth rates are not expected to conform to a steady average but to have peak and valleys.**

**Lisa Rutherford and Paul Van Dam Comment 40:**

**3.2.1 WCWCD 2010 Per Capita Water Use (Page 3-2)**

*In 2010 the per capita water use in the WCWCD service area was estimated to be 325 gpcd.*

**Figure 3-1** shows that 270 gpcd was culinary water and 55 gpcd was secondary untreated water (DWRe 2013a; DWRe 2013d). Residential use contributed 156 gpcd, and commercial, institutional and industrial (CII) use contributed 169 gpcd. CII includes use from second homes.

**COMMENT**

*Rather than using 325 gpcd in 2010 as was estimated, we were using 270 gpcd. From the WCWCD's November 2013 presentation "Lake Powell Pipeline Preliminary Financial Modeling" provided by Las Vegas consultant Jeremy Aguero of Applied Analysis:*

*Washington County is currently demanding approximately 270 gallons per capita per day. The Governor's conservation goal would reduce the value to 251 gallons per capita per day by 2025.*

*Yet, the Applicant and WCWCD assert in WNA and other study reports to FERC that using the governor's conservation goal of 35% and based on the Maddaus 2015 "Conservation Technical Analysis" we will be using 285 gpcd in 2060 with conservation.*

**UDWRe Response:**

**Potable-only water use data was used in the referenced finance presentation. Untreated secondary water use, which is billed differently than potable water, was not included in that presentation.**

**Lisa Rutherford and Paul Van Dam Comment 41:**

**Projected Water Demand**

**3.3.1 Required Source-Sizing Standards (Page 3-4)**

*Per capita water use is anticipated to decline resulting from increased conservation, but ultimately, the quantity of water municipalities must be capable of providing their customers is dictated by design standards for source sizing. Utah Division of Drinking Water (DDW) requires sources to meet both average and peak day demands (DDW citation, R309-510).*

**COMMENT**



*The reference to Utah Division of Drinking Water design standards for source sizing must be challenged given the Dec. 2014 Utah Legislative Audit that found the DDW's information is flawed. Approval of this pipeline project before Utah's DDW deals with the discrepancies noted, discrepancies that feed directly into the state's need assertions, should be delayed.*

**UDWRe Response:**

**Per capita water use projections, not current design standards, were used in the WNA to project future water needs. However, as this paragraph explains, under current state law, water systems must be designed based on these standards. Washington County's current per capita water use aligns with these standards, but as water use decreases from conservation, the law will need to be changed to allow for the decreases in the supplies required per connection.**

**Lisa Rutherford and Paul Van Dam Comment 42:**

**3.3.2 WCWCD Water Demand Forecast (Page 3-4)**

*Water demand forecasts for total M&I water use for WCWCD are shown in **Table 3-3** (DWR 2014c).*

***Figure 3-4** projects both secondary untreated and culinary demands out to 2060.*

**COMMENT**

*As, previously stated, the gpcd figures shown in Table 3-3 are based on outdated, faulty information and should be rejected.*

**Table 3-3 WCWCD Total M&I Water Demand Forecast**

Year	Population	Per Capita Use with Conservation (gpcd)	Total Projected Water Demand with Conservation (ac-ft/yr)
2010	138,530	325	50,380
2020	196,480	311	68,450
2030	279,270	295	92,220
2040	369,370	295	122,010
2050	468,990	295	154,940
2060	576,850	285	184,250

Source: DWR 2014c

**UDWRe Response:**

**The 2015 WNA uses the most up-to-date and accurate information. Refer to previous responses to comments regarding commentor misunderstanding information used in finance presentation was for potable water use only.**

**Chapter 4 Comments:**

**LPP Coalition Comment 1:**

*(Section 4.2.4, Page 4-12)*

**Total Washington County Municipal and Industrial Water Supplies**

*“Total reliable existing and near-term supply for Washington County is approximately 67,677 ac-ft per year, made up of culinary (potable) and secondary untreated (non-potable) supplies.”<sup>83</sup>*

*Future culinary supplies of 13,670 (AF) and future secondary water reuse supplies of 7800 (AF) and 10,000 (AF) that equals 98,727 (AF) a year.*

Figure 9. Water Supplies/Acre Feet (AF)

67,677	WCWCD and Cities
13,670	Future culinary
17,380	Future secondary reuse 7800, 10,000 agricultural conversion
98,727 (AF) a year	Total water 2060

*UBWR claims that only 98,727 (AF) of existing and future water supply is in the county by 2060 and the county runs out of water by 2024. It is not based on accurate facts because they ignore all the other existing and future water supplies listed below (in other LPP Coalition comments – UBWR). In addition, they inflate water demand by not validating the data.*

<sup>83</sup> PLP, Study Report, p.4-12

#### UDWRe Response:

**The concerns expressed in this comment will be addressed in responses to future comments.**

#### LPP Coalition Comment 2:

(Section 4.2.4.2, Page 4-13)

##### Secondary Untreated Water Supplies

*“A number of irrigation companies deliver secondary untreated water to M&I systems in Washington County. While these 2010 secondary untreated water use data are considered reliable due to the significant validation process followed by DWRe, reliable data for previous years are not available with enough frequency to assess possible trends in use within the county or on a per capita basis. Total secondary untreated use in Washington County, including systems owned by WCWCD, is approximately 8,505 ac-ft per year (DWRe 2013a, Table 4-4).”*

*UBWR just carries forward 8,505 (AF) of secondary water annually since 2000 without any justification for that which also artificially increases demand, especially when you add the extra 55 gpcd to per capita use. If UBWR corrected these errors by collecting accurate data in the WNA and then eliminated or lowered the 55 gpcd it would reflect more water savings than is in the current District’s Water Conservation Plan by 2060. For example, the District’s 2015 Water Conservation Plan in the WNA only saves 40 gpcd, 12 percent, in 50 years between the years 2010-2060 and will cost taxpayers \$44 million. More importantly, if UBWR would correct their errors the Project would not be needed by 2024.*

#### UDWRe Response:

**Table 4-4 in the Water Needs Assessment breaks down the 8,505 ac-ft per year secondary supply by municipality. Elimination or reduction of secondary per capita use is not necessarily desirable as secondary supplies could potentially be used instead of culinary water for outdoor landscaping resulting in a decrease in potable per capita use.**

**LPP Coalition Comment 3:**

(Section 4.2.5.2, Page 4-20)

**Agricultural Conversion for M&I Supply**

*“The study estimated that 12,880 ac-ft per year could be converted for secondary untreated M&I purposes with a 90 percent reliability. This value includes some existing irrigation supplies that have already been converted.*

*Using the M&I Water Use Report data (DWRe 2013g) for secondary untreated water supplies, it was estimated that about 2,800 ac-ft per year of Washington Fields was included in the 12,880 ac-ft per year value. Thus, the remaining irrigation water available for conversion to secondary untreated M&I use is about 10,080 ac-ft per year. The majority of agricultural supply that would be converted to M&I supply as a result of development has high TDS concentrations that would either require blending with lower TDS supplies or very costly (RO) treatment to reduce overall TDS. In the future, water from agricultural conversions made in the Washington Fields area could be placed in a future storage facility, allowing efficient management of this water for secondary untreated and other purposes in the area. Blending with reuse water and Santa Clara River stored water could reduce the overall TDS. WCWCD intends to use stored water for use in M&I pressurized secondary untreated supply systems in the future.”<sup>106</sup>*

*UBWR is not accounting for all the 87,000 (AF)<sup>107</sup> of agricultural water in the county correctly and more will convert to urban use by 2060 than is identified in the WNA. For example, the WNA only accounts for 22,960 (AF) of agricultural water that includes 4000 (AF) converting to culinary use and 10,000 (AF) for secondary use by the year 2060 and 7420 (AF) is already included in existing water supply.<sup>108</sup>*

**Figure 15. Agricultural Water**

Agricultural water estimated in 1993	87,000 (AF) <sup>109</sup>
Agricultural water estimated in the Lake Powell Pipeline 2011 studies converting to culinary and secondary by 2060	4,000 ac feet for culinary and 10,000 (AF) for secondary to 2060. In, addition 7420 (AF) is included in existing water supply

*Some of this water will have to be treated and some will convert to culinary without treatment. This is because the 87,000 (AF) of agricultural water is still somewhere in the system keeping something green--either a pasture, a yard, or public open space--and all of it needs to be accounted for.*

<sup>106</sup> PLP Study Report 19, p. 4-20

<sup>107</sup> Water Resources Planning for the Future. May 2001, Division of Water Resources, Utah State Water Plan, page 13; see at: [http://www.water.utah.gov/waterplan/SWP\\_pff.pdf](http://www.water.utah.gov/waterplan/SWP_pff.pdf)

<sup>108</sup> MWH Lake Powell Pipeline Water Needs Assessment, March 2011, Utah Board of Water Resources, p. 64. See at:

<http://citizensfordixie.org/wpcontent/uploads/2012/04/19DraftWaterNeedsAssessmentReport-1.pdf>

<sup>109</sup> Utah State Water Plan, Kanab Creek/Virgin River Basin, August 1993. p 5-25 estimated irrigation water use 87,800 (AF) in Washington County; See at

[http://www.water.utah.gov/planning/swp/kan\\_vir/Kan\\_VirIndex.htm](http://www.water.utah.gov/planning/swp/kan_vir/Kan_VirIndex.htm)

#### **UDWRe Response:**

The 1993 Kanab Creek/Virgin River Basin Plan cited 16,680 acres of irrigated cropland with 87,800 acre-feet of diversions and 39,320 acre-feet of depletions, annually. As can be seen in the difference between water diversion and depletion estimates, return flows contribute to available water supplies in the Kanab Creek/Virgin River drainage basin. Downstream agricultural users of the Virgin River are especially reliant upon the return flows of upstream users. Agricultural users also routinely face shortages during drought years, so even if the State Engineer were to grant 100 percent conversion of agricultural water rights to municipal water rights, that does not mean that the water would reliably be there for use.

It is also worth mentioning that local communities value agriculture. In 2014, a state-wide, community visioning project called Envision Utah surveyed more than 50,000 Utahns on several topic areas, one of which was agriculture. The survey found that Utahns are willing to:

- cut back on watering lawns and gardens to ensure there is enough water for agricultural,
- avoid building on farmland,
- spend more money to bring non-agricultural water to urban areas.

In 2012, USDA Census of Agriculture estimated 14,780 acres of irrigated land remained in Washington County. The 2015 Water Needs Assessment projects an increase in supply from agricultural conversion by 2060 of 10,080 acre-feet per year in Washington County, with a 90 percent reliability. This estimate includes conversion of acreage on the outskirts of St. George and Washington that is most likely to be developed. Coincidentally, this acreage is located downstream on the Virgin River, and the full conversion of the associated water supplies to municipal use by the State Engineer is likely as there are no users dependent on return flows. The conversion of additional agricultural land is less probable as remaining acreage is in more rural areas that are not anticipated to see the same population increases. These remaining acreages are also upstream in the watershed and full conversion to municipal supply is less likely to be approved.

As noted in the Water Needs Assessment, much of the water projected to become available from agricultural conversion is brackish and will require advanced treatment, such as reverse osmosis, or blending with other supplies to make it suitable as a potable or even secondary water supply.

<sup>1</sup>Envision Utah. Survey Results for Agriculture. Accessed on March 30, 2016 at

<http://envisionutah.org/projects/your-utah-your-future/item/346-results>.

<sup>2</sup>USDA. 2012 Census Volume 1, Chapter 2: County Level Data. Table 10. Irrigation: 2012 and 2007 Accessed April 11, 2016 at

[http://www.agcensus.usda.gov/Publications/2012/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_County\\_Level/Utah](http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Utah).

**LPP Coalition Comment 4:**

*(Section 4.2.5.2, Page 4-20)*

**Agricultural Conversion for M&I Supply**

*The Study Report is incorrect by only accounting for 22,960 (AF) of agricultural water rights available for growth by 2060. As the land is developed, more agricultural water rights will become available. All 87,000 (AF) of agricultural water rights need to be accounted for in the Study Report before inclusion in the EIS analysis.*

**UDWRe Response:**

**Agricultural conversion in Utah occurs on a free-market basis, and will supply some water as the land is developed for other purposes; however, water entities must work within current Utah water rights law protecting water right owners as supplies are transferred, conserved and developed to meet future demands.**

**Lisa Rutherford and Paul Van Dam Comment 43:**

***Chapter 4 – Water Supply Conditions***

***4.1 Introduction (Page 4-1)***

*In Washington County, water quality of the Virgin River below the LaVerkin hot springs is a significant issue affecting potential supplies, which are therefore not planned for implementation within the study period; these supplies could be part of a longer term water supply portfolio if identified problems are resolved. Certain sources not feasible for development in Washington County are discussed in Section 4.2.6.*

**COMMENT**

*Applicant acknowledges that challenging but potential local water supplies “could be part of a longer term Water supply portfolio” then asserts certain sources are not feasible but provides no real justification for that position. Because the LPP Project has been on the books since 2006, one must wonder how much effort has really gone into determining whether treating these local waters are feasible or not. According to many studies, it is cheaper to deal with treating water sources incrementally than pushing forward with a massively expensive and potentially unreliable water project. All local options should be explored prior to approval of the LPP as was described in the “Local Waters Alternative to the Lake Powell Pipeline” produced by WRA.*

**UDWRe Response:**

**Refer to the response to Andrew Kramer Comment 5.**

**Lisa Rutherford and Paul Van Dam Comment 44:**

*(Page 4-2) The high cost, high energy demand, and lack of an environmentally sound alternative for disposal of the waste brine stream is a deterrent to reverse osmosis (RO) treatment of the Virgin River water supply. As technology improves over time and the costs of water treatment decline, it may become economically feasible to treat high TDS water for culinary use without the adverse environmental effects currently of concern. The proposed LPP project would import*

*higher quality water much more economically and would avoid the environmental impacts associated with RO treatment.*

**COMMENT**

*If it's expected, as noted above, that RO technology will improve and the costs of water treatment decline over time, we should wait and not build the LPP. Applicant has not provided adequate information about water treatment to determine if it would be cheaper than the LPP and information about the environmental effects associated with RO need to be explored more completely.*

**UDWRe Response:**

**Refer to the response to Lisa Rutherford and Paul Van Dam Comment 43. Sole reliance on Virgin River basin water sources will lead to a water deficit. Postponing RO until technology improves without importing additional supplies will not prevent this deficit, which is why it was not selected as the Proposed Action.**

**Lisa Rutherford and Paul Van Dam Comment 45:**

*(Page- 4-3) The design and operation of the Lake Powell Pipeline intake at Lake Powell would allow water diversion from the top 100 feet of Lake Powell to optimize water quality of the supply that would be conveyed through the pipeline.*

**COMMENT**

*The Applicant and WCWCD assert that the top LPP intake would provide high quality water. The 2011 Water Needs Assessment provided this detail showing the water compares favorably with that of the Virgin River: TDS concentrations of untreated Lake Powell water in the top 100 feet range from 350 to 600 mg/L. However, with the effects of climate change and the associated unknowns revealed in "2015 Revised Draft Study Plan 19 Climate Change" by the many studies cited, if the lake level drops, the lower intake may be the intake used. Water quality at that level may be nearly as challenging as some local supplies that they assert are difficult and expensive to treat. Would this require additional treatment before the water enters the pipeline to prevent corrosion and other possible equipment damage? Has that potential cost been factored into the LPP costs? With the lowest intake at 3,375 and dead pool at 3,370, the water quality could be challenging.*

*Additionally, there are many concerns about our local water quality and costs dealing with total dissolved solids, but not enough study has been done regarding the cost of treating for the zebra and quagga mussels in LP that will affect this project.*

*Draft Study Report 2 Aquatic Resources (page 3-6 to 3-6) provides information pertaining to the quagga and zebra mussels in Lake Powell and the chemical and mechanical processes that could be employed to deal with the infestation and mitigate the potentially dire effects on the LPP equipment. However, nowhere in Revised Draft Study Report 2, Revised Draft Socioeconomic-Water Resource Economic Study Report 10, or Revised Draft Special Status Aquatic Resource Study Report 11 is there an accounting of the costs associated with these chemicals and the labor required. Perhaps this is included in the economic analyses somewhere, but it should be required by FERC to be identified in a stand-alone manner due to the seriousness and to ensure taxpayers this ongoing cost has been thoroughly considered.*

**UDWRe Response:**



**Lisa Rutherford and Paul Van Dam Comment 46:**

*WCWCD System Facilities*

**4.2.3.1 Culinary Water Systems (Page 4-7)**

*An evaluation of aquifer storage and recovery at Sand Hollow is presented in the Groundwater Resources Technical Report, (DWRe 2011c). Currently it is estimated that there is approximately 106,000 ac-ft stored in the aquifer that could be used for this purpose (USGS 2013). Most of the recharged water stored in the Navajo Sandstone Aquifer would be reserved for use during dry periods to compensate for any deficit between annual supply and demand.*

**COMMENT**

*If 106,000 ac-ft is stored in Sand Hollow aquifer to be used “during dry periods to compensate for any deficit between annual supply and demand” and given that our county’s usage is considered by the USGS to be the highest in the nation, there seems plenty of wiggle room currently available to deal with the water hardening and climate change concerns described by Applicant in their draft study reports. This provides additional rationale for rejecting the LPP Project.*

*An example of how conservation and lower usage can help protect the 106,000 acre feet in storage currently comes from Albuquerque’s “2024 Water Conservation Plan Goal and Program” (Update July 2013):*

*With a reduction to a GPCD of 135, the amount needed from the drought reserve could be reduced from 37,808 acre-feet to 23,262 acre-feet for a total savings in the drought years of 14,546 acre-feet. So, reducing our usage will not only reduce our demand for additional water but will also protect what we have stored as a buffer and eliminate need for additional water from LPP. If this potential savings has not been calculated into Applicant’s study report numbers, FERC should require that it be included.*

**UDWRe Response:**

**The 106,000 acre-feet is stored water that could be drawn down over a couple years during a prolonged drought. It does not have a renewable annual yield.**

**WCWCD recognizes conservation is essential in meeting future water needs. Changes in technology, demographics, community values, and other factors may have unanticipated effects on water use. Conservation above the levels used in these reports is encouraged by WCWCD; however, the conservation goals used are prudent for planning. These goals have been vetted by Division of Water Resources, each district, community participants, and Maddaus Water Management. They exceed current state goals, utilize available technologies, and, importantly, are believed to be achievable within the timeframe that additional water supplies will be needed in Washington County.**

**Lisa Rutherford and Paul Van Dam Comment 47:**

**4.2.3.2 Secondary Untreated Water Systems (Page 4-7)**

*Because of the value of secondary untreated water in offsetting demand on culinary systems, and because of the limited infrastructure, secondary untreated water is delivered to public parks, golf*



*courses and other areas over the entire 24 hour period the water is available regardless of time of day water restrictions.*

**Secondary Untreated Customers (Page 4-11)**

*Several churches, golf courses, parks, and schools are served by the secondary untreated systems. Approximately eight golf courses, ten parks, sixteen schools, six churches and eight subdivisions, an RV park, the St. George WWTP, and the city power yard are all supplied with secondary untreated water. Two private ditch companies also provide water in the St. George service area. Bloomington Water Company provides water to residential lots near the Bloomington Hills golf course. Cottonwood Irrigation supplies water to Dixie State College. Secondary untreated customers are generally charged based on a water rate structure that is intended to encourage use of this supply to offset culinary demand, rather than to recover full cost of delivery.*

**COMMENT**

*For those who live in Washington County it is easy to see the vast expanses of grass watered by the users noted above, expanses that take enormous amounts of water. WC citizens will be faced with paying for the expensive LPP to subsidize this water use. If the amount of lawn was more limited in Washington County, there would not be so much secondary untreated water needed for it – water that’s often used during the hottest parts of summer days due to system requirements – and much of that water could be treated and used for other purposes.*

*The following tables – Table 4-1 from the 2015 WNA and Table ES-10 from the 2011 WNA show some confusion regarding reliable secondary water. 7,885 afy were lost somewhere between 2011 and 2015. Applicant should explain why we are losing reliable supply mostly from secondary supply.*

**2015 Water Needs Assessment Info**

Table 4-1 WCWCD Existing Projects and Water Uses		
Project	Reliable Culinary Quality Water Yield (ac-ft/yr) <sup>(1)</sup>	Reliable Secondary untreated Quality Water Yield (ac-ft/yr) <sup>(4)</sup>
Quail Creek and Sand Hollow Reservoirs <sup>(2)</sup>	24,922	0
Sand Hollow Non-Recharge Groundwater <sup>(3)</sup>	4,000	0
Cottam Well Field	875	0
Kayenta Water System (Ence Wells)	250	0
Crystal Creek Pipeline	2,000	0
Toquerville Secondary untreated Water System	0	178
<b>Total</b>	<b>32,047</b>	<b>178</b>
Notes: <sup>(1)</sup> Source of data: WCWCD 2008a; WCWCD 2014. <sup>(2)</sup> Reliable yield for Quail and Sand Hollow Reservoirs includes yields from Kolob and Meadow Hollow Reservoirs. (DWRe 2014a). <sup>(3)</sup> Supply utilizes water rights and natural basin recharge. <sup>(4)</sup> DWRe 2013a. Assumed reliable supplies are equivalent to current secondary untreated water use.		

$$32,047 + 178 = 32,225$$

**2011 Water Needs Assessment Info**

Table ES-10 WCWCD Existing Supplies – Reliable Yield

Project	Reliable Culinary Quality Water Yield (ac-ft/yr) <sup>(1)</sup>	Reliable Secondary Quality Water Yield (ac-ft/yr) <sup>(1)</sup>
Quail Creek and Sand Hollow Reservoir	22,600	0
Sand Hollow Ground Water	3,000	0
Kolob Reservoir	2,000	0
Meadow Hollow Reservoir	200	0
Crystal Creek Pipeline	2,000	0
Cottam Well Field	2,000	0
Sullivan Well Field	750	0
Kayenta (Ence Wells) Water System	1,000	0
Gunlock to Santa Clara Pipeline	0	2,500 <sup>(2)</sup>
Toquerville Secondary Water System	0	160
Existing Wastewater Reuse	0	3,900
Total	33,550	6,560
Notes:		
<sup>(1)</sup> Source of data: (WCWCD 2006; WCWCD 2007c; DWRe 2009b, DWRe 2011), except for Gunlock to Santa Clara Pipeline reliable secondary yield.		
<sup>(2)</sup> Source of data: WCWCD 2008.		

The total existing reliable supply in Washington County, including those rights owned by the WCWCD and all other entities, is approximately 74,560 ac-ft/yr of potable supply and 7,450 ac-ft/yr of secondary supply (DWRe 2007a; DWRe 2009b). Reliable supply for surface water sources was calculated for a 90 percent reliability level (i.e., maximum surface water shortage of 10 percent in any given year that would be made up with ground water supply). The source of the Sand Hollow Ground Water supply is leakage from Sand Hollow Reservoir. WCWCD has determined that this supply will be considered a reserve or emergency supply for use only during a severe drought, facility outage, or other emergency. For this reason 3,000 ac-ft/yr of the total reliable yield is shown in Table ES-10. Uncertainties associated with future climate changes, population growth, aging infrastructure, and other factors result in the need for prudent planning as mitigation against unforeseen water shortages. The resulting total reliable existing and near-term supply for Washington County is approximately 82,110 ac-ft/yr.

$$33,550 + 6,560 = 40,110$$

*According to what I read in the 2015 WNA and previous WNA, there is much water supply to be gained by dealing with storage and infrastructure of secondary water. Currently, much water is not being used because of these deficiencies.*

#### UDWRe Response:

**Secondary water is an essential component of future water supplies. The 2015 WNA uses the most reliable and up-to-date information and was updated to eliminate double counting of secondary water supplies that had previously occurred.**

#### Lisa Rutherford and Paul Van Dam Comment 48:

##### 4.2.3.1 WCWCD System Facilities (Page 4-6)

**Quail Creek and Sand Hollow System.** Quail Creek and Sand Hollow reservoirs are a combined system, receiving Virgin River water from the Quail Creek Diversion structure through a pipeline network. Water delivery to these off-stream reservoirs is limited by the capacity and operational requirements of the diversion structure and pipeline system.

#### COMMENT

*Why must the limited capacity persist? What is stopping an increase in capacity? This does not seem to have as well defined as it should be to reassure FERC that options aren't*

viable.

**UDWRe Response:**

**The capacity is limited by the size of infrastructure. The sizing of current infrastructure leaves water in the river that sustains habitat and maintains the hydrographic patterns that are generally deemed desirable for desert ecosystems. The costs of replacing that infrastructure with larger-sized infrastructure could only provide increased yield by eliminating these habitat and environmental benefits and would not be allowed under the ESA.**

**Lisa Rutherford and Paul Van Dam Comment 49:**

*4.2.3.3.3 St. George Secondary Untreated Systems St. George Reuse Treatment Plant (Page 4-9)  
Demand for reuse water exists only during the irrigation season; as a result the reuse plant is only operated from late March to late October. There is currently no storage for reuse water. When supply exceeds secondary untreated demand, and reuse plant is shut down, and wastewater effluent is discharged to the Virgin River. Because of this limitation, the current maximum annual yield from the reuse facility is approximately 5,800 ac-ft per year, with 3,900 ac-ft per year committed to Shivwits Band of Paiute Indian Reservation and area golf courses. In 2007, approximately 2,460 ac-ft of reuse water was treated and distributed (City of St. George 2009a).*

**COMMENT**

*Just because there's no storage currently, doesn't mean there couldn't be or shouldn't be. Applicant is seeking to secure right to Colorado River so water won't flow down river to other users – as is often stated during state and local meetings – while WCWCD sends water down river by not working to provide additional storage to make use of that water. Could this excess reuse water be stored/treated to culinary level in the future?*

**UDWRe Response:**

**Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in the Water Needs Assessment. This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands.**

**Final Study Report 22 – Alternatives Development discusses treatment of wastewater reuse to culinary standards.**

**Lisa Rutherford and Paul Van Dam Comment 50:**

*4.2.4 Total Washington County Municipal and Industrial Water Supplies (Page 4-12)  
Total reliable existing and near-term supply for Washington County is approximately 67,677 ac-ft per year, made up of culinary (potable) and secondary untreated (non-potable) supplies.*

**COMMENT**

*From the 2011 WNA (Page ES-15):*

*The total existing reliable supply in Washington County, including those rights owned by the WCWCD and all other entities, is approximately 74,560 ac-ft/yr of potable supply and 7,450*

*ac-ft/yr of secondary supply (DWRe 2007a; DWRe 2009b).*

*The latest 2015 total is 67,677 ac-ft per year? Where did the 6,883 ac-ft per year shown in the 2011 WNA go?*

**UDWRe Response:**

**Water supplies were thoroughly examined, and the most accurate and up-to-date yields were included in the 2015 Water Needs Assessment (WNA). The yields of some supplies were reduced to reflect actual yield with a proportional increase in future supplies to fully utilize water rights. Secondary water yields were updated to eliminate double counting of supplies that had previously occurred.**

**Lisa Rutherford and Paul Van Dam Comment 51:**

**4.2.4.1 Culinary Water Supplies (Page 4-12)**

*The total reliable culinary water supply in Washington County, including WCWCD, is approximately 59,172 ac-ft per year. Table 4-3 shows the reliable culinary water supplies developed by each public community water system in Washington County.*

**COMMENT**

*The WCWCD's Water Line publications in 2010 and 2011 revealed that the district can provide 105,000 afy without the LPP. Applicant should be required to explain why their WNA Table ES-1 figures (below) are not agreeing and why they are off of the WCWCD's 2010 and 2011 water number (105,000) noted above.*

*(From Table ES-1 Existing and Future Reliable Culinary Supplies for Washington County 2015 WNA)*

AFY	Source	Comment
32,225	WC – current culinary	Quail Creek & Sand Hollow reservoirs & 4,000 afy aquifer yield) (Quail when full is 40,000 ac ft, Sand Hollow 50,000 ac ft, and aquifer 106,000 ac ft - yet yield is only 32,225 afy)
35,273	Cities – current culinary	
13,670	WC – future culinary	local projects to deliver additional culinary, or potable water prior to construction of the LPP project - ash creek pipeline and others
17,360	WC – future reuse/secondary	(10,000 ag, 7,360 reuse) (could be much more!)
98,528	<b>Total Existing and Future Reliable Culinary without the LPP available by 2060</b>	

**UDWRe Response:**

**The difference in yields from the 2011 and 2015 WNA are primarily due to the elimination of double counting of secondary supplies and the decrease in anticipated yield in the future Ash Creek Reservoir.**

**Lisa Rutherford and Paul Van Dam Comment 52:**

**4.2.5.1.2 Well Field Expansions Sand Hollow Recharge/Recovery (Page 4-12)**

*Additional local groundwater will be developed at the Sand Hollow well field to achieve the maximum allowable yield capacity, although the major portion of the recharged groundwater*

*will be reserved as a drought buffer. The Sand Hollow recharge and recovery source will need arsenic treatment or blending and transmission upgrades for use as a culinary supply.*

**COMMENT**

*If the water will need arsenic treatment or blending and transmission upgrades required, have those cost been factored into the overall cost of the LPP since LPP water is involved and where?*

**UDWRe Response:**

**Treatment and/or blending of these water sources will occur with or without the LPP project; therefore, the costs have not been included. These projects are included as planned, pre-LPP water supply projects.**

**Lisa Rutherford and Paul Van Dam Comment 53:**

**4.2.5.2 Additional Secondary Untreated Water System Expansion (Page 4-16)**

*WCWCD and the several cities within the WCWCD service area propose to expand secondary untreated systems in their communities to offset culinary water use. Expansion of secondary untreated water infrastructure, including water distribution pipelines and storage tanks, would allow greater use of reuse water. It is prohibitively expensive to add secondary untreated delivery systems in already-developed communities. Expansion may be justified where trunk lines can meet large secondary untreated demands at golf courses, cemeteries, parks, and other large outdoor irrigation needs. Some cities are requiring secondary untreated water systems to be installed in new developments where it may be practicable to deliver secondary untreated water in the future.*

**COMMENT**

*Earlier information in these comments indicates how important proper management of secondary water is to help meet future water needs. Although our current population is not straining our water resources which will allow for growth, infrastructure must be planned so that culinary water is not wasted on outdoor watering. Currently, wastewater generated during winter months – off irrigation season – is wasted. It's important for Washington County cities and towns to enact building ordinances that require secondary systems for new construction. Those that are already doing that have gone a long way to ensuring a good future for our area and are to be commended.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 54:**

**4.2.5.2.1 St. George City (Page 4-17)**

*The St. George wastewater reuse plant could be maximized to its 10 mgd design capacity (11,200 ac-ft per year). The plant's current reuse capacity is 7.0 mgd or 7,800 ac-ft per year, but due to lack of storage, this supply can only be used to meet secondary untreated demands during the irrigation season from April through October. Thus, the usable supply is 50 percent, or 3,900 ac-ft per year. Assuming storage facilities would be implemented, a future maximized 10 mgd plant capacity would result in an additional 7,300 ac-ft per year of future supply.*



*Any reuse capacity above the 10 mgd design capacity would require new treatment facilities. In theory, wastewater reuse could be increased up to approximately 49,000 ac-ft per year in 2060. This estimate is based upon the wastewater effluent rate for communities served by the St. George wastewater treatment plant (St. George, Washington, and Santa Clara) using the indoor water use projections. This estimate may be high as it does not consider limitations placed by return flow commitments, secondary untreated demand timing and the infrastructure available to store and deliver the supply.*

*This assessment assumes that St. George will require all new development to install secondary untreated water systems, where feasible, by 2020.*

#### **COMMENT**

*It seems clear from the above information that securing 49,000 afy reuse wastewater by 2060 is not unreasonable. This would be over half of the LPP water at much less cost. New treatment facilities seem a more reasonable expense than expensive transported water. Even if the 49,000 estimate is high and infrastructure to store and deliver needed, the cost should be explored more fully before proceeding with a multi-billion dollar pipeline project.*

*The storage capacity limiting factor seems something the cities and county can design around. They seem able to meet their other storage needs when required. In fact, in the WNA's next paragraph about the city of Hurricane states, "Another 3MG reservoir adjacent to the existing reservoir is proposed for additional storage. So, why can't St. George manage additional storage, also?"*

*Finally, St. George should be getting onboard and require all new development to install secondary untreated water systems now and the infrastructure to support that. If they are catering to the development community by not enacting these ordinances now, they are forcing the LPP on all citizens in Washington County rather than pulling their weight as the county's largest city. Decisions such as these – to delay requirement of secondary systems – implies that there is no real need upon which to justify an expensive pipeline; it's just being justified by poor decisions at the local level. It shows that continued overwatering of lawns with culinary water is supported.*

#### **UDWRe Response:**

**Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in the Water Needs Assessment. This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands. A decrease in anticipated indoor water use would likewise decrease potential reuse supply.**

#### **Lisa Rutherford and Paul Van Dam Comment 55:**

##### **4.2.5.2.3 Ivins City (Page 4-17)**

*Future municipal irrigation system demands at 2060 are projected to be 3,100 ac-ft per year, with a peak day demand of 4,700 ac-ft per year.*

#### **COMMENT**

*Ivins City has a projected 2060 population of 27,000 according to WNA Table 3-1. At that population, 3,100 afy would amount to 103 gpcd and 4,700 afy would amount to 155 gpcd. This is where the rest of Washington County should be if we were really focused on water conservation for the future. Ivins has embraced the low-water, drought-tolerant, native-vegetation landscaping motif in most, if not all, new areas and is to be commended. Additionally, since the 1990s Ivins has required separate culinary and secondary systems in new development.*

**UDWRe Response:**

**The estimate of 103 gpcd is of secondary untreated water demand only. Indoor residential and indoor CII uses would be in addition to these demands, and there may also be remaining outdoor potable uses in 2060 as well. Ivins City's utilization of secondary water and desert landscaping is commendable.**

**Lisa Rutherford and Paul Van Dam Comment 56:**

*4.2.5.2 Additional Secondary Untreated Water System Expansion*

*4.2.5.2.6 Washington City (Page 4-18)*

*Preliminary calculations show that on average the amount of water recovered from the scalping plant could take care of the secondary untreated irrigation needs of the community. In October 2006 the City adopted an ordinance requiring all new development within the city to install distribution infrastructure within new developments. The projected secondary untreated demand in 2060 is 3,343 ac-ft per year (DWRe 2014c).*

**COMMENT**

*The projected secondary untreated demand in 2060 of 3,343 and Washington City's projected population at that time of 79,020 (WNA Table 3-1) would result in a secondary use of 38 gpcd. With Washington "County" 2010 total-county secondary use at 55 gpcd (WNA Figure 3-1), 38 gpcd is an improvement. At this point, my information shows that a "scalping plant" can't be implemented because the State of Utah's laws won't allow it. If true, this points to the fact that this state is really not serious about conservation.*

**UDWRe Response:**

**Reduction of secondary per capita use is not necessarily desirable as secondary supplies could potentially be used instead of culinary water for outdoor landscaping resulting in a decrease in potable per capita use.**

**Lisa Rutherford and Paul Van Dam Comment 57:**

*4.2.5.3 Agricultural Conversion for M&I Supply*

*(Page 4-20) WCWCD intends to use stored water for use in M&I pressurized secondary untreated supply systems in the future. Water could also be managed for environmental uses such as providing target flows in the Virgin River for the endangered woundfin minnow and Virgin River chub.*

**COMMENT**

*Given that the district, apparently, has not done well managing the Virgin River spinedace situation and is now being sued by a major environmental organization for not living up to the agreement, it remains to be seen if they will manage the woundfin minnow and Virgin River*



*chub any better. Yes, there is the Virgin River Program and WCWCD has built their \$3 million Desert Garden ostensibly to “educate” the public about these fish, but with little real conservation being done, I do not believe the LPP water will help. In fact, with little conservation effort, the LPP water will just encourage more and faster growth than otherwise would happen, in my opinion. Already floodplain encroachment has been an issue and additional growth will exacerbate that along with increased urban runoff and resulting water pollution and other growth-related issues that challenge the health of the Virgin River.*

**UDWRe Response:**

Targeted actions completed under the Virgin spinedace Conservation Agreement and Strategy (VSCAS) have resulted in Virgin spinedace occupying 89% of their historic habitat, up from 60% in 1994. Actions to restore flow and Virgin spinedace populations increased current Virgin spinedace distribution by 49.3 km (30.6 mi) above baseline 1995 occupied habitat. In addition, distribution surveys from 2003 to 2012 found Virgin spinedace had naturally re-colonized 12.7 additional km (7.9 mi) above baseline occupied (historic) habitat in the East Fork of Beaver Dam Wash (6.3 km; 3.9 mi), Magotsu Creek (2.6 km; 1.6 mi), and North Creek (3.9 km; 2.4 mi). In addition, Virgin spinedace currently occupy an additional 10.8 km (6.7 mi) of habitat that was not considered historic habitat in the 1995 VSCAS, in Moody Wash (5.4 km; 3.4 mi), Racer Canyon (1.0 km; 0.6 mi), and La Verkin Creek (4.3 km; 2.7 mi). Significant progress has been made to protect and restore Virgin spinedace populations. Although management actions to deal with drought and climate change continue to be discussed, it is encouraging that many of the VSCAS accomplishments have been completed despite an unprecedented period of drought. Cooperative management partnerships developed in the interest of Virgin spinedace recovery under the VSCAS have provided resources to actively manage Virgin spinedace. These partnerships provide a powerful management tool to ensure the persistence and expansion of Virgin spinedace populations.

**Lisa Rutherford and Paul Van Dam Comment 58:**

*(Page 4-21) Lake Powell water in the top 100 feet ranges from 350 to 600 mg/L TDS. As described in Section 4.2.2, blending untreated Lake Powell water with agricultural water (1,500 mg/L) at about 2:1 would result in an overall supply with 735-900 mg/L TDS, which is assumed to be acceptable for secondary untreated use in this report.*

**COMMENT**

*Since it is not certain that water could be drawn from the 100' intake at LP and might have to be drawn from lower intakes 2 or 3, it is not certain that the TDS of 350 to 600 mg/L will be the case and TDS might be higher, therefore not providing the quality of water they assume. Has Applicant made provision for this situation and how does this affect the amount of agricultural water that could be converted? Does the 10,080 afy include the agricultural water dilution using LPP water? How much agricultural water can be converted to M&I supply without LPP water?*

**UDWRe Response:**

**Lisa Rutherford and Paul Van Dam Comment 59:**

*(Page 4-21) RO treatment is not under consideration at this time for secondary untreated use because of environmental, technical, and economic feasibility issues. For purposes of discussion,*

*assuming a TDS concentration of 1,500 mg/L for the agricultural supply and 100 percent removal of TDS, 2,470 ac-ft per year of the total 7,400 ac-ft per year supply would have to be treated with RO to meet 1,000 mg/L, leaving an average annual yield of 6,900 ac-ft per year for secondary untreated use.*

**COMMENT**

*The Applicant has already conceded in “4.2.2 Water Quality Effects on WCWCD Future Supplies” (page 4-2) that “As technology improves over time and the costs of water treatment decline, it may become economically feasible to treat high TDS water for culinary use without the adverse environmental effects currently of concern. The proposed LPP project would import higher quality water much more economically and would avoid the environmental impacts associated with RO treatment.”*

*The cost of RO treatment will continue to come down as the technology improves and the demand increases. As for the energy needs, our “sunny” county continues to lose out when it comes to solar and its use. Why could solar not be used to help provide the necessary energy. Utahn ingenuity seems able to solve many problems that they “want” to solve but then fall short when the desire is not there and they see an “easy fix” such as the LPP.*

**UDWRe Response:**

**Refer to the response to Lisa Rutherford and Paul Van Dam Comment 44.**

**Lisa Rutherford and Paul Van Dam Comment 60:**

*4.2.6 WCWCD Water Sources not Feasible for Development*

***4.2.6.1 Virgin River Water** (Page 4-22)*

*The studies described here have looked for additional water downstream from existing diversions. A large portion of the available water supply occurs during short periods of high streamflow, which cannot be economically diverted with standard river diversion and conveyance facilities. Even if an alternative diversion structure and conveyance system could be built, the high TDS would disqualify the supply for M&I use (including secondary untreated water use) as discussed in **Section 4.2.2**. Another factor, the lack of available storage sites, is discussed below.*

**COMMENT**

*Although additional diversions downstream from existing diversions may not be possible, Ron has asserted in his own Water Line publication (2010 and 2011) that he can provide 105,000 afy reliably **WITHOUT** the LPP, and that would support a lot of growth with reasonable conservation, certainly more conservation and less gallons per capita per day than the Maddaus and other reports forecast (~282 gpcd or more)*

**UDWRe Response:**

**The amount of water available has been updated to 98,150 acre-feet in the latest WNA. Total per capita use would need to decrease 53% (from 324 to 152 gpcd) in order for this supply to meet the demands of the 576,846 people projected in 2060. While the WCWCD recognizes conservation is essential in meeting future water needs, extreme measures would need to be taken to reduce usage to this level.**

**Lisa Rutherford and Paul Van Dam Comment 61:**

*(Page 4-24) Potential storage locations within the Virgin River Basin were investigated by the DWRe (1988; 1992). Of the 96 potential sites considered, DWRe screened out all but 16 sites based on geologic flaws, potential storage capacity, onsite field reviews, and detailed characteristics such as cost and environmental considerations.*

*(Page 4-24) Of the 16 sites remaining after DWRe's analysis, only two of the reservoir sites were deemed to be potentially feasible sites for storage of additional Virgin River water.*

**COMMENT**

*So, apparently there are two options for capturing VR water when flows are high. If adequate storage and additional water supplies were available, it may become possible to blend high TDS Virgin River water with a lower TDS supply from another source (e.g., reuse water and excess Santa Clara Project Water) to create water suitable for secondary untreated M&I purposes. The questions are how much would this "large diversion structure and storage facility" cost compared to the LPP and what are the effects that higher TDS waters would have? Applicant should be required to provide that information in clear and detailed comparison to the LPP.*

**UDWRe Response:**

**Refer to the response to Lisa Rutherford and Paul Van Dam Comment 13.**

**Chapter 5 Comments:**

**LPP Coalition Comment 1:**

*(Section 5.2.1.13, Page 5-7)*

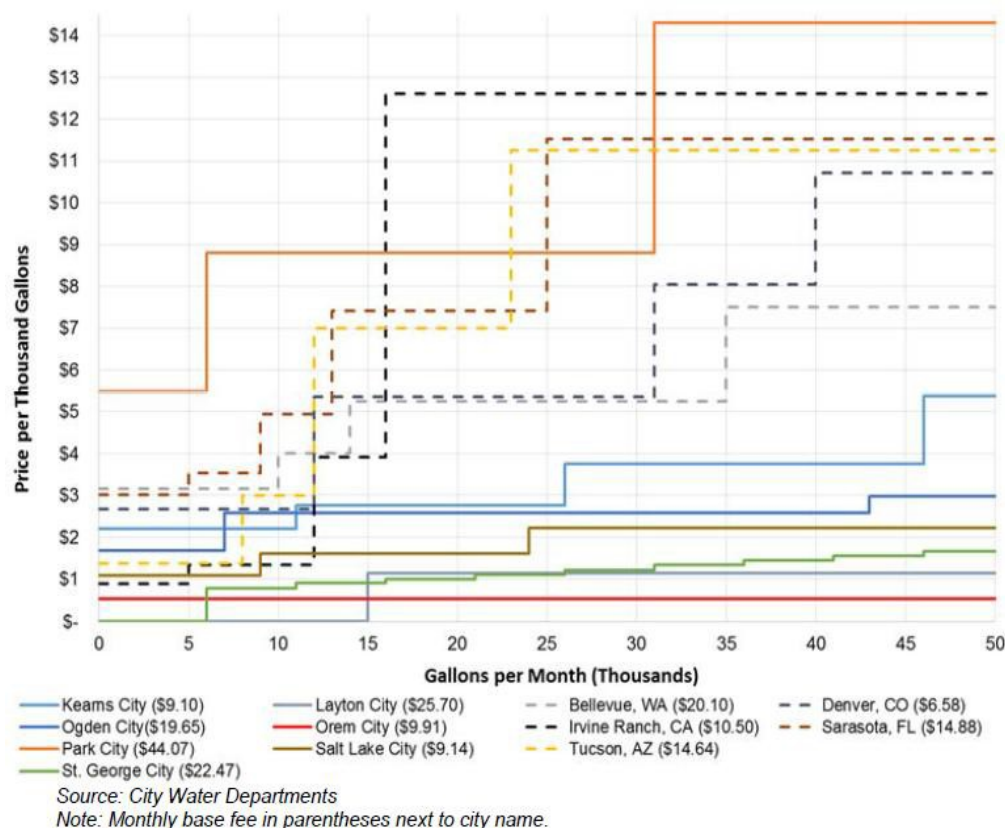
**Water Rates**

*"To encourage the reduction of water consumption, many cities have adopted inclining block-rate structures. Block rate structures consist of fixed amounts of water sold at a unit price. Increased block rate structures are based on the idea that consumers will use less water if the unit rate of water increases with increased volume consumption. Inclining block-rate structures are more effective in encouraging customers to reduce their water use when there is a significant price difference between each tier. WCWCD and the following cities have adopted increasing block rate structures: Springdale, Hurricane Valley, La Verkin, Ivins, Washington, Santa Clara, St. George, Enterprise, and Hurricane, where the price of water is stepped up based upon increased usage. In addition, WCWCD completes a water budget for each of its golf course customers and charges a 50 percent surcharge for usage in excess of the budget amount."<sup>119</sup>*

*However, the cities do have block step pricing, but they do not have steps that signal conservation and are relatively flat. This is noted on chart from the audit below Figure 16.*

Figure 16. Comparison of City Water Rate Structures<sup>120</sup>

**Comparison of City Water Rate Structures.** Some Utah cities have increasing block rate structures, but the rate increases are relatively flat when compared to cities in other states.



The Auditor’s report explains the problem with relatively flat block rates like we have in Southern Utah. It states:

*“State Policies on Metering and Pricing Can Affect Water Demand. Utah’s relatively low water costs appear to contribute to higher per capita water use when compared with other states. Unless per capita water use is reduced, new, more costly sources of supply will need to be developed. As pressures on Utah’s currently developed supply intensify, local and state policymakers will need to consider policy options to reduce demand, including universal metering and water pricing.”*

<sup>119</sup> PLP Study Report 19, p.5-7

<sup>120</sup> A Performance Audit of Projections of Utah’s Water Needs, Office of the Legislative Auditor General, State of Utah, May 2015, Chart on p.iii, See at, <http://citizensfordixie.org/wp-content/uploads/2015/05/DWR-audit- water-5-5-15.pdf>

#### UDWRe Response:

**While conservation pricing and conservation practices are important, they are only part of the solution. In order to meet projected demand additional facilities will have to be built.**

**LPP Coalition Comment 2:**  
(Section 5.2.3, Page 5-8)

**Conservation Savings**

*“As previously shown in Table 51, total per capita water use decreased 26 percent in WCWCD’s service area between 2000 and 2010 (DWRe 2014c). The overall culinary water conservation savings for WCWCD from 2000 to 2010 was determined by DWRe to be 15 percent utilizing actual data for the 6-Cities between 2000 and 2010 (DWRe2013c). Reduction in regional per capita water use can result from conservation actions, changes in housing density, housing types, landscaping, lot sizes, climate water pricing, drought policies, regional economic conditions (e.g., recessions), percentage of non-permanent residents, hotel occupancy, and commercial, institutional and industrial (CII) uses.”<sup>114</sup>*

*As we have detailed in our comments there is no validated evidence in the record that 439 gpcd was accurate for Washington County in the year 2000. It is an error that needs to be corrected. Therefore, the claim of conservation saving 26% is not valid using 439 gpcd as a baseline for the year 2000. On the contrary, the 2011 Water Needs Assessment uses data from the six cities that established the baseline in 2000 at 325 gpcd. We support the six cities version because they are the largest cities that will use water from the Project. However, UBWR does not use the baseline of 325 gpcd for 2000, nor the 20% conservation savings, nor the lower 246 gpcd listed below by 2060 in the Water Needs Assessment of 2011.*

*Moreover, water conservation savings are derived by simply dividing supplies by population. Therefore, as the population grows and similar water supplies are included the per capita use goes down. Thus, it is not necessarily because of implementing any water conservation programs.*

<sup>114</sup> PLP, Study Report 19, pp. 5-8

**UDWRe Response:**

**The 2015 WNA used the most accurate and up-to-date water use information. Water conservation savings are determined by dividing water used, not water supplies, by the population.**

**LPP Coalition Comment 3:**  
(Section 5.2.4, Page 5-9)

**Future Goals and Water Conservation Programs**

*“Future water conservation savings were estimated through a detailed water conservation study, originally conducted for WCWCD by Maddaus Water Management in 2010 (MWM 2010b) and updated in 2015 (Appendix B, MWM 2015a). This analysis reviewed water use data (billing data), evaluated existing water conservation measures, considered potential future water conservation measures and selected a program*



considered likely to be implemented in the future. The analysis relied on a model developed by MWM that analyzes water use at the end-use level (e.g., individual appliances and fixtures) and considers factors such as individual unit water savings, year of implementation, unit costs, and market penetration”.<sup>115</sup>

“Table 5-4 summarizes the projected GPCD reductions and percent conservation anticipated with the selected program. Results show that by 2060 WCWCD could reduce its 2010 GPCD levels by 12 percent by 2060.”

UBWR included conflicting data in the record. The Water Needs Assessment that was submitted into the record in 2011 is different than the current 2015 Water Needs Assessment (WNA). The 2011 WNA had 325 gpcd in 2000 as baseline per capita use, not 436 gpcd as stated in the 2015 WNA. The 2011 WNA also shows much more conservation is possible and the gpcd is much lower at 256 gpcd by 2060. (See Figure 11.)

Figure 11. Water Needs Assessments 2008, 2011, 2015

Year WNA	Existing reliable supplies (AF) Culinary & secondary Washington County	Population	gpcd
2015 <sup>95</sup>	67,677	<sup>1</sup> 167,439	
2011 <sup>96</sup>	83,910		<sup>2</sup> 294
2008 <sup>97</sup>	83,910		<sup>3</sup> 328

- <sup>1</sup> Study Report 10, 2015, page 4-2
- <sup>2</sup> Further, the 2011 Water Needs Assessment’s water demand forecast for a population of 559,670, using as a baseline 294 gpcd (average of the six largest cities), with 14% conservation savings by 2060 and was only 254 gpcd, with a demand of only 159,400 ac ft. In the 2015 WNA 325 gpcd for 2010, page 3-2
- <sup>3</sup> Water Needs Assessment of 2008, used 2005 data for gpcd

<sup>115</sup>PLP, Study Report 19, p.5-9

#### UDWRe Response:

**The 2015 WNA used the most accurate and up-to-date water use information.**

#### Lisa Rutherford and Paul Van Dam Comment 62:

Chapter 5 – Water Conservation Programs

##### 5.1 Introduction (Page 5-1)

In 2000 the state of Utah set a statewide water conservation goal of reducing the 1995 per capita water demand from public community systems by at least 25 percent before 2050 (DWRe 2003). Then, in 2002, the state revised the goal to be at least a 25 percent reduction by the year 2050 from the baseline year 2000. DWRe estimates that an 8 percent reduction occurred from 1995 to 2000. In 2013, the state again revised its conservation goal to a 25 percent reduction of 2000 water use by 2025. DWRe estimated that the state of Utah achieved an 18 percent water use reduction between 2000 and 2010 (DWRe 2010).

#### COMMENT

*In 2002 the state revised the conservation goal from baseline year 2000. 1995 had been the baseline before. In 2013 the state again revised the conservation goal but stayed with the 2000 baseline. In 2015 the Maddaus “Conservation Technical Analysis” remained focused on the 2000 baseline. Applicant should be required to use up-to-date usage figures rather relying on outdated figures just to help justify need for pipeline. The state may have a conservation goal, but that should not restrict Applicant from using accurate, real-time numbers if they exceed what the state’s goal has been. Our latest actual usage figure of 270 gpcd (2013 WCWCD figure) compared to the 2000 gpcd of 439 shows that we have already had an improvement that is good but not enough compared to other desert communities.*

**UDWRe Response:**

**The baseline year for the statewide conservation goal is 2000; however, 2010 usage of 325 gpcd is incorporated into all models, as this is the most recent and reliable per capita usage number. As addressed in previous comments, the 270 gpcd did not include 55 gpcd of secondary water and water use comparisons are often inappropriate even among desert communities.**

**Lisa Rutherford and Paul Van Dam Comment 63:**

**5.1.1 Historical Conservation and Goals (Page 5-2)**

*Maddaus Water Management (MWM) concluded that 30 to 35 percent reduction by 2060 is attainable if additional conservation measures are implemented in each district’s service area. Descriptions of these measures and results of the model are discussed in depth in the following sections. Based on this analysis, and the notable conservation already realized by both districts, the total per capita use reduction goals listed in **Table 5-1** are assumed when calculating future water demands.*

**Table 5-1 Conservation Goals<sup>1</sup>**

Year	WCWCD	KCWCD (Kanab City and Johnson Canyon)	All Subbasins Combined
2010	26%	24%	21%
2025	33%	32%	28%
2060	35%	35%	31%
<sup>(1)</sup> Percent reduction in total per capita water use from 2000.			
<sup>(2)</sup> Source: DWRe 2014c.			

**COMMENT**

*This information is flawed by virtue of the fact that they use 2000 baseline usage figures that are very high. By using a high starting point, they end up – even after conservation is factored in – at a 2060 usage figure that is higher than we are currently using.*

*Aside from the Maddaus information, who knows if the figures from DWRe 2014c are relevant in light of the May 2015 Utah Legislative Audit showing their data gathering is flawed and in need of being fixed to determine what the real numbers are.*

*The water district presents a long list of conservation programs and efforts, but from what I’ve witnessed, there are few, if any, real requirements and enforcement is at best lax. It is*



*basically a take it or leave it system in which citizens can continue to use water excessively, if they see fit.*

**UDWRe Response:**

**Your comment has been noted.**

**Lisa Rutherford and Paul Van Dam Comment 64:**

**5.2 Washington County (Page 5-2)**

*Water use in the WCWCD service area reflects a strong trend towards increased conservation. The older parts of communities reflect the pioneer lots established at the time of settlements with gardens and trees, forming a narrow ribbon of green in the valleys. New developments have limited irrigated area, less turf and more desert-wise landscaping. From 2000 to 2010, conservation savings are estimated at about 26 percent (DWRe 2014c).*

**COMMENT**

*“Some” new developments have limited irrigated area, less turf and more desert-wise landscaping, not all. There are many new areas in growing Washington County that still have large expanses of grass being used along with traditional landscaping. As noted previously, some communities have adopted the desert landscape style such as Ivins, but that is not necessarily true elsewhere particularly in St. George.*

**UDWRe Response:**

**The district requires the cities to have conservation pricing, time of day watering ordinances, landscaping plans and conservation plans as a condition of purchasing water from the District. In addition, impact fees under the Regional Water Supply Agreement provide an incentive to reduce large expanses of grass because conservation easements on larger lots may be obtained to avoid paying the increased impact fees required for excess irrigated landscaping.**

**Lisa Rutherford and Paul Van Dam Comment 65:**

*(Page 5-2) Given the long growing season, the annual precipitation of about 8 inches (WRCC 2013), with little falling during the peak demand season, the ever-increasing reduction in water use reflects the substantial efforts devoted to water conservation in Washington County. This achievement is magnified when considering that about 27 percent of the homes in Washington County are second homes, whose use is attributed to the resident population. Additional uses that are uniquely combined in the county include millions of tourists each year and Dixie State University’s nonresident students, which add a substantial water use factor onto the relatively small local population (Section 2.3.3). Per capita water use numbers will continue to decline as development density increases with urbanization.*

**COMMENT**

*The BOR “Moving Forward 2015” report of the seven basin states and major metropolitan areas clearly shows that other desert cities have significant numbers of second homes, tourists. If “per capita water use numbers will continue to decline as development density increases with urbanization” occurs, then the erroneous usage figures presented in this WNA will be even better in the future resulting in less need for the LPP.*

**UDWRe Response:**

**Reduced usage derived from declining per capita usage alone will not meet long term projected demand. Water conservation and water resource development will both be essential to meet reasonably anticipated demand.**

**Lisa Rutherford and Paul Van Dam Comment 66:**

*(Page 5-2) As the first water conservancy district in Utah to adopt a water conservation plan, WCWCD has been a leader in conservation in Utah and continues to enhance its conservation programs.*

**COMMENT**

*This assertion seems incorrect when one reviews the achievements of the Jordan Valley Water Conservancy District. Their “2014 Conservation Plan Update” shows that they have basically negated the need for funding big water projects through their conservation efforts. Although their climate and needs vary from Washington County’s, their focus on conservation over large projects is one Washington County should adopt. From the JVWCD conservation plan:*

- *Achieving the conservation goal will reduce potable water demand 52,000 acre-feet per year within JVWCD’s current service area boundaries by 2025. That reduction will increase to 71,000 AF/year by 2050.*
- *Current estimated capital costs to construct water supply projects range from \$3,250/AF for the Southwest Jordan Valley Groundwater Project to \$14,200/AF for the future Bear River Project. An average cost based on these and other projects equals \$11,400/AF for six future water supply projects proposed by JVWCD. Developing 71,000 AF of additional water at that cost would total more than \$800 million. Assuming a 30- year bond financed at 3 percent, the total capital cost of developing this amount of water is about \$1 billion, which does not include any environmental, water treatment, or operation and maintenance costs.*
- *Conserving water and deferring future water supply projects could save in excess of \$1 billion.*

**UDWRe Response:**

**The circumstances under which JVWCD operates differ from those in the WCWCD service area, so comparisons are not valid. In many instances, unintended impacts to river habitat create greater costs and environmental impacts compared to construction of water infrastructure. WCWCD has achieved substantial conservation and has effective programs as set forth in the information at the end of the response to Utah Rivers Council Comment 5.**

**Lisa Rutherford and Paul Van Dam Comment 67:**

**5.2.1 Washington County Water Conservancy District Programs**

*(Page 5-3) Conservation activities began in Washington County with the first Water Fair in 1995.*

**COMMENT**

*BOR's "Moving Forward 2015" report shows that some other basin states and cities have been focused on conservation since the 80s. Washington County, although knowing for several decades that growth was extremely high and more coming, chose to ignore real conservation and now is playing catch up but still ignoring what really needs to be done rather than building a pipeline.*

*Much of Washington County's water goes to commercial, industrial and institutional (CII) usage as noted in previous comments. Although the water district asserts that with additional growth that percentage (47%) will diminish as the resident to CII ratio changes, and although the recent Maddaus report seems to obfuscate CII usage by changing the way the user segments are designated, it's still true that we use far more than necessary. One must only drive around Washington County and see the vast expanses of lawns at churches, schools, etc., that are unused areas which could use desert landscape, to know there's a problem.*

*Many of the CII users do not pay property taxes – taxes which help support high water use in Washington County and basically subsidize water while eliminating the need to raise water rates to help ensure conservation. WC is one of the few areas that uses property tax to pay for water.*

*Although the 2015 Maddaus "Conservation Technical Analysis" provides several conservation options to achieve better conservation, even with conservation, the analysis shows that by 2060 the Kanab Creek/Virgin River Basin will have only achieved 285 gpcd under the "preferred" Program B, which the district asserts is the most cost effective.*

**UDWRe Response:**

**Most western states use some form of taxation to pay for water projects, environmental projects, watershed enhancements, endangered species mitigation. Property taxes are collected by water providers in California, Colorado and Arizona.**

**Lisa Rutherford and Paul Van Dam Comment 68:**

**5.2.1.12 Ordinances and Impact fees (Page 5-7)**

*All municipal customers of the district have time-of-day watering restrictions to discourage excessive water use. Impact fees, applicable to all new development (new platted lots and building permits) within the service areas of municipal customers, are based on the size of the irrigable portion of the lot, with a pro rata increase for irrigated areas over a certain size (WCWCD 2008b).*

**COMMENT**

*"Time-of-day watering restrictions" may be in place to discourage excessive water use, but there is little if any evidence that that is being universally successful. As I drive around Washington County, I still see watering being done during the hottest part of the day. Enforcement seems lacking.*

**UDWRe Response:**

**Your comment has been noted.**

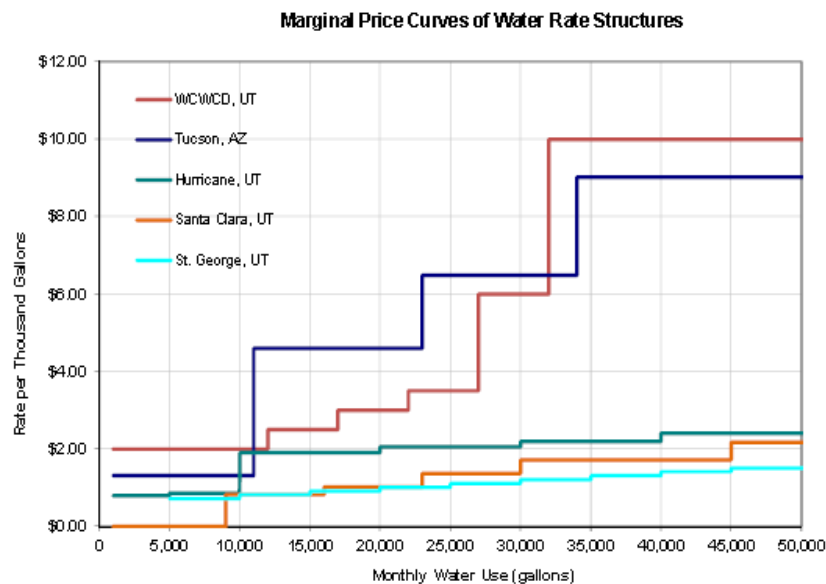
**Lisa Rutherford and Paul Van Dam Comment 69:**

### 5.2.1.13 Water rates (Page 5-7)

To encourage the reduction of water consumption, many cities have adopted inclining block-rate structures.

#### COMMENT

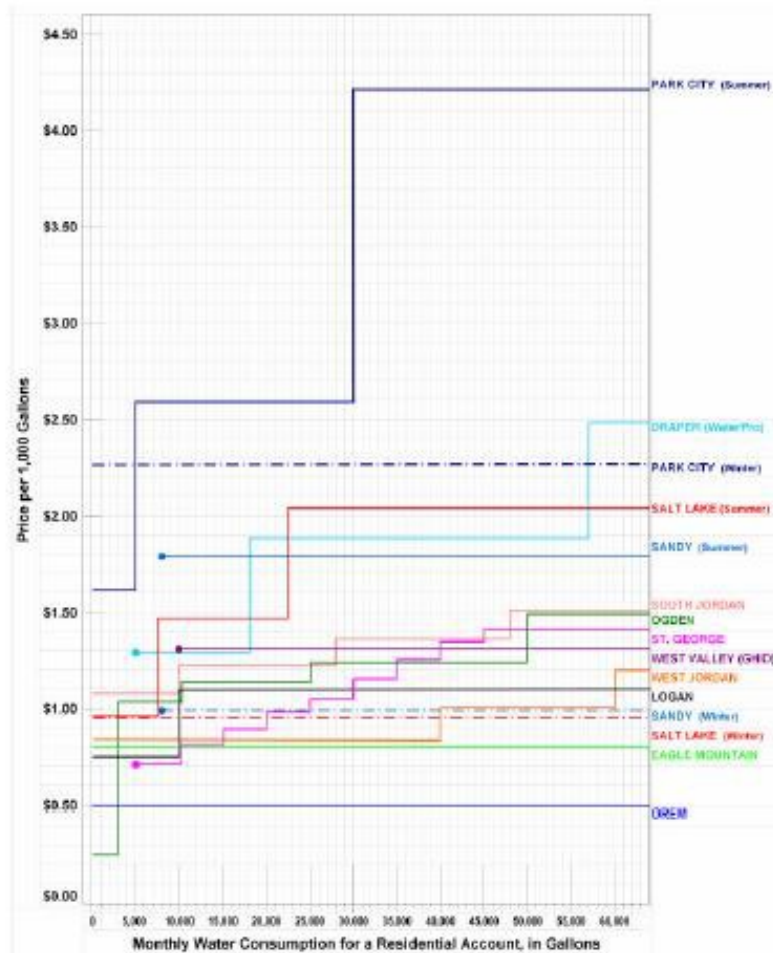
Rate structures in WC to encourage conservation are taken compared to what other areas have in place to encourage conservation of water. The following charts are from reports completed by Western Resource Advocates. The chart “Marginal Price Curves of Water Rate Structures” on the following page is from WRA’s 2012 “Local Waters Alternative to the Lake Powell Pipeline.”



**Figure 7. The price structures of water in St. George, Santa Clara, and Hurricane UT are relatively flat and do not send a price signal to customers when they use excessive amounts of water. This is in contrast with a conservation oriented rate structure, like in Tucson, AZ.<sup>32</sup>**

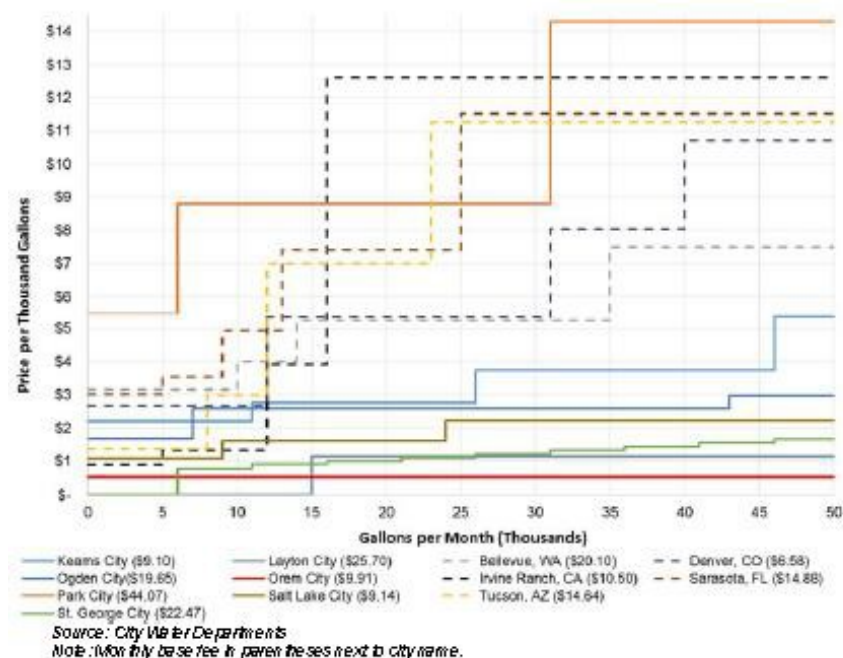
This chart (Figure 1) from WRA’s 2005 “Water Rate Structures in Utah: How Utah Cities Compare Using This Important Water Use Efficiency Tool” shows that St. George, WC’s largest city, doesn’t even compare well when compared with other Utah cities, in a state that’s been noted to have some of the cheapest water – if not the cheapest – in the nation.

**Figure 1**  
**Marginal Price Curves (Consumption Charges) of Water Rate Structures in Utah,**  
**as of October 2004**



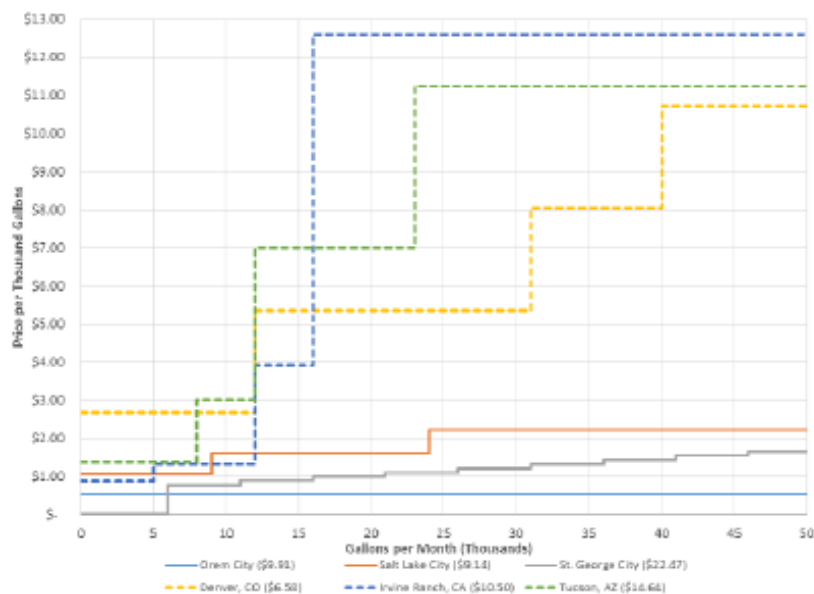
*This chart (Figure 3.6) from the Utah Division of Water Resources audit provides more evidence – comparing St. George water rates to rates of other cities in Utah as well as cities outside Utah.*

**Figure 3.6 Comparison of City Water Rate Structures.** Some Utah cities have increasing block rate structures, but the rate increases are relatively flat when compared to cities in other states.



This chart (Figure 2) from the Utah Legislature audit of Utah's Division of Water Resources continues to support that WC's rate structure efforts are lacking.

**Figure 2. Comparison of City Water Rate Structures.** A selected group of Utah Cities are shown to have flatter block rate structures when compared to those of other major western cities. More pronounced block rates tend to encourage conservation.



#### **5.4 Conclusions (Page 5-16)**

WCWCD has been a leader in water conservation for many years.

#### **COMMENT**

*This is difficult to believe! Even a cursory study of other water conservation efforts in other desert cities and review of publications such as the BOR's "Moving Forward 2015" report reveal this is a bold assertion and easily challenged.*

#### **UDWRe Response:**

**Refer to the information at the end of the response to Utah Rivers Council Comment 5.**

#### **Chapter 6 Comments:**

##### **LPP Coalition Comment 1:**

*(Section 6.1, Page 6-1)*

#### **Water Resources Planning**

*"It is estimated the LPP would need to be brought online in 2024 when the projected demand with conservation nears 81,273 ac-ft, exceeding the total reliable supply. Total reliable supply for WCWCD is 67,498 ac-ft per year with an additional 13,670 ac-ft per year of culinary or potable supply projects planned for completion prior to 2060."<sup>117</sup>*

*The Study results use inaccurate data and the Commission Staff should require UBWR to provide current validated data as required by Study Plan Section 19.2.2. There is no credible evidence in the record that the county will be out of water by 2024. The Auditor General's Audit points out the flaws in the projections of statewide water needs; all of them apply in Washington County, as well. We have detailed the flaws in the data in our comments.*

<sup>117</sup> PLP Study Report 19, p. 6-1

#### **UDWRe Response:**

**LPP Project water is projected to be needed by 2028 in Washington County. This has been corrected in Chapter 6 of the final report.**

#### **Lisa Rutherford and Paul Van Dam Comment 70:**

#### **Chapter 6 – Water Resources Planning**

##### **6.1 Introduction (Page 6-1)**

**WCWCD:** *It is estimated the LPP would need to be brought online in 2024 when the projected demand with conservation nears 81,273 ac-ft, exceeding the total reliable supply. Total reliable supply for WCWCD is 67,498 ac-ft per year with an additional 13,670 ac-ft per year of culinary or potable supply projects planned for completion prior to 2060. A portion of the culinary supplies can be used to meet secondary untreated demands as necessary until their full yield is needed to fulfill culinary requirements.*

#### **COMMENT**



*Some time ago we were told we would be running out of water by 2020 and now they're saying that we will be able to do without the LPP until 2024. The projected 2024 demand "with conservation" near 81,273 AFY would serve the projected 225,000 population (Figure 2-3 of WNA) but at a usage of 323 gpcd – higher than we're using now in Washington County.*

<i>POP</i>	<i>AFY</i>	<i>GALS</i>	<i>GALS/DAY</i>	<i>gpcd</i>
225,000	81,273	26,494,998,000	72,589,036	322.62

*Since the Maddaus analysis used for the WNA seems to include all water usage in the Kanab Creek/Virgin River Basin, perhaps that is driving some of the high usage figures. But this part of the WNA clearly separates WC from KC, so this 322.62 gpcd is not reasonable given that our usage in 2013 was 270 gpcd as evidenced by the WCWCD's own presentation that year.*

#### **UDWRe Response:**

**LPP water is projected to be needed by 2028 in Washington County. This has been corrected in Chapter 6 of the final report. The 2010 estimate of 270 gpcd includes potable use only and does not include 55 gpcd secondary water use. Inclusion of secondary use yields a total of 325 gpcd.**

#### **Lisa Rutherford and Paul Van Dam Comment 71:**

##### **6.4 Conclusion (Page 6-10)**

*Demand projections to 2060 for each county were provided by the State of Utah Department of Water Resources (DWRe 2014b). Entities in both counties are implementing conservation measures and have committed to future programs developed through a detailed water conservation study conducted by Maddaus Water Management (Appendix B; MWM 2015 a; MWM 2015b). Each district is expected to exceed the State of Utah's water conservation goal of reducing per capita use from 2000 usage by 25 percent by year 2025. Existing reliable supplies for each water district have been evaluated and it is determined that they are being efficiently and fully utilized.*

##### **COMMENT**

*This WNA is clearly biased in favor of the LPP by virtue of the fact that 2000 water usage is being employed to calculate future usage numbers when we are already using less water (270 gpcd according to WCWCD 2013 information) than is projected for 2060.*

Table 3-3 WCWCD Total M&I Water Demand Forecast

Year	Population	Per Capita Use with Conservation (gpcd)	Total Projected Water Demand with Conservation (ac-ft/yr)
2010	138,530	325	50,380
2020	196,480	311	68,450
2030	279,270	295	92,220
2040	369,370	295	122,010
2050	468,990	295	154,940
2060	576,850	285	184,250
Source: DWRRe 2014c			

*The Maddaus 2015 "Conservation Technical Analysis" also acknowledges the following.*

- *Market penetration goal with regard to success of conservation measures: Baseline surveys are the best approach to having the most accurate information on market saturation. This was taken into account when analyzing individual conservation measures where best estimates were made. MWM was not provided with any baseline surveys for this analysis, but discussions were held with WCWCD regarding their best estimates of saturation for their service area.*

*How accurate were these "best estimates" provided by WCWCD? Are they reliable enough to base the need for a multi-billion dollar project upon?*

#### UDWRRe Response:

Usage from 2000 is the baseline for the State of Utah's conservation goals. The 2010 estimate of 270 gpcd includes potable use only and does not include 55 gpcd secondary water use. Inclusion of secondary use yields a total of 325 gpcd. WCWCD conferred with MWM actual participation rates in current conservation programs that are trackable (e.g. rebates, water audits) and best estimates for those that are not (e.g. public information program, demonstration garden visits) to help determine likely market penetration rates for future programs.

## **Draft Study Report 20 – Wetland and Riparian Resources:**

### ***General Comments:***

#### **Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 20: Wetlands and Riparian Resources (Nov. 30, 2015) ("Revised Draft Study Report 20") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 46-49. In addition, the UBRW states that Revised Draft Study Report 20 "will be updated with pending additional data, information, impact analyses, protection, mitigation and enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBRW also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data, information and associated impact analyses performed will be updated in*

*revised draft study reports and filed with the Commission as soon as they are completed." Id. The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study reports after they are revised further.*

*As it stands, Revised Draft Study Report 20 is largely incomplete because it does not include important information regarding protection, mitigation, and enhancement measures and either cumulative or unavoidable adverse impacts. Thus, the Commission should remand Revised Draft Study Report 20 to the UBWR for further revisions that are consistent with these comments and that fill in the substantial informational gaps.*

**UDWRe Response:**

**A Riparian Resource Mitigation Plan and additional updates were made to the Wetlands and Riparian Resources Study Report.**

**Chapter 2 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 2.1.1)*

*The Kaibab Tribe previously commented that the UBWR did not cite any tribal data or sources of information, including the Kaibab Tribe's list of plants of cultural concern. 2011 Comments at 47. The UBWR continues to ignore tribal data and sources of information in its latest draft report. See Revised Draft Study Report 20 at 2-1. The final study report on wetlands and riparian resources must list all tribal data and sources of information, including the Kaibab tribe's list of plants of cultural concern.*

**UDWRe Response:**

**Plants of cultural concern were added to the final version of the report.**

**Kaibab Tribe Comment 2:**

*(Section 2.1.2.1)*

*The Kaibab Tribe previously commented that the UBWR failed to reference the Kaibab Tribe's list of plants of cultural concern, as required by Study Plan 20. 2011 Comments at 47. The UBWR continues to ignore the Kaibab Tribe's list of plants of cultural concern in its latest draft study report, however. See Revised Draft Study Report 20 at 2-1. The final study report on wetlands and riparian resources must reference and consider the Kaibab Tribe's list of plants of cultural concern.*

**UDWRe Response:**

**Plants of cultural concern were added to the text.**

**Kaibab Tribe Comment 3:**

*(Section 2.1.2.3)*

*The Kaibab Tribe previously commented that the UBWR must indicate whether it obtained tribal permission prior to installing scour chains on tribal lands at Two Mile Wash and Cottonwood Creek. 2011 Comments at 47. The UBWR still does not state whether it obtained tribal*

*permission in its latest draft report. See Revised Draft Study Report 20 at 2-2 to -3. The final study report on wetlands and riparian resources must indicate whether the UBWR obtained the Kaibab tribe's permission to install scour chains at Two Mile Wash, Cottonwood Creek, and any other location on tribal lands.*

**UDWRe Response:**

**Text was added indicating that permission was obtained.**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 3.2)*

*The Kaibab Tribe previously commented that the UBWR did not indicate whether it obtained tribal permission to conduct field surveys on the Kaibab Indian Reservation. 2011 Comments at 47. The UBWR remains silent in its latest draft report on whether it consulted with the Kaibab Tribe or obtained tribal permission prior to conducting field surveys on the Kaibab Indian Reservation. See Revised Draft Study Report 20 at 3-1 to 3-4. The final study report on wetlands and riparian resources must include information on tribal consultations and the permissions the UBWR obtained regarding filed investigations on Kaibab lands.*

**UDWRe Response:**

**Text was added indicating that permission was obtained.**

**Kaibab Tribe Comment 2:**

*(Section 3.5.5)*

*The Kaibab Tribe previously commented that the UBWR must indicate whether it obtained tribal permission prior to installing scour chains on tribal lands at Two Mile Wash. 2011 Comments at 48. The UBWR still does not state whether it obtained tribal permission in its latest draft study report. See Revised Draft Study Report 20 at 3-10. The final study report on wetlands and riparian resources must indicate whether the UBWR obtained the Kaibab tribe's permission to install scour chains at Two Mile Wash.*

**UDWRe Response:**

**Text was added indicating that permission was obtained.**

**Kaibab Tribe Comment 3:**

*(Section 3.5.7)*

*The Kaibab Tribe previously commented that the UBWR must indicate whether it obtained tribal permission prior to installing scour chains on tribal lands at Cottonwood Creek. 2011 Comments at 48. The UBWR still does not state whether it obtained tribal permission in its latest draft study report. See Revised Draft Study Report 20 at 3-10. The final study report on wetlands and riparian resources must indicate whether the UBWR obtained the Kaibab tribe's permission to install scour chains at Cottonwood Creek.*

**UDWRe Response:**

**Text was added indicating that permission was obtained.**

**Kaibab Tribe Comment 4:**

*(Section 3.6)*

*The Kaibab Tribe previously commented that the UBWR must indicate whether it obtained tribal permission prior to collecting field data and digital photographs on tribal lands. 2011 Comments at 48. The UBWR still does not state whether it obtained tribal permission in its latest draft study report. See Revised Draft Study Report 20 at 3-12. The final study report on wetlands and riparian resources must indicate whether the UBWR obtained the Kaibab tribe's permission to collect field data and take digital photographs on tribal lands.*

**UDWRe Response:**

**Text was added to indicate that permission was obtained prior to any work occurring on Kaibab-Paiute Indian Reservation lands.**

**Chapter 4 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 20 will be updated with pending additional data and information concerning "impact analyses," PLP at P-1, this chapter must be considered incomplete. The final study report on wetlands and riparian resources must include the additional information concerning impact analyses, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Additional analysis has been conducted concerning impacts to potentially jurisdictional waters. Public review and comment is part of the FERC process and will continue as FERC and the cooperating agencies prepare the EIS.**

**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 20 will be updated with pending additional data and information concerning "protection, mitigation, and enhancement measures," PLP at P-1, this chapter must be considered incomplete. The final study report on wetlands and riparian resources must include the additional information concerning mitigation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the Kaibab Tribe previously commented that the UBWR failed to explain how it developed mitigation measures or whether it consulted with the Kaibab Tribe in doing so, as required by Study Plan 20, to protect plants of cultural concern. 2011 Comments at 48. The latest draft study report continues to exclude this information, however. See Revised Draft Study Report 20 at 5-1 to -3. The final study report on wetlands and riparian resources must describe*

*the UBWR's efforts to consult with the Kaibab Tribe to mitigate impacts to plants of cultural concern.*

**UDWRe Response:**

**Mitigation measures relating to riparian vegetation impacts were added. A table identifying plants of cultural concern was added to the text.**

***Chapter 6 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 20 will be updated with pending additional data and information concerning "unavoidable adverse impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on wetlands and riparian resources must include the additional information concerning unavoidable adverse impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Additional analysis has been conducted concerning impacts to potentially jurisdictional waters. Public review and comment is part of the FERC process and will continue as FERC and the cooperating agencies prepare the EIS.**

***Chapter 7 Comments:***

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 20 will be updated with pending additional data and information concerning "cumulative impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on wetlands and riparian resources must include the additional information concerning cumulative impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

## **Draft Study Report 21 – Wildlife Resources:**

***General Comments:***

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 21: Wildlife Resources (Nov. 30, 2015) ("Revised Draft Study Report 21") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 49-50. In addition, the UBWR states that Revised Draft Study Report 21 "will be updated with pending additional data, information, impact analyses, protection, mitigation and*



*enhancement measures, cumulative impacts, and unavoidable adverse impacts." PLP at P-1. The UBRW also states that "field surveys will be performed on Arizona State Trust Lands resulting from a recent necessary change in the Proposed Action alignment," and that "[t]he collected field data, information and associated impact analyses performed will be updated in revised draft study reports and filed with the Commission as soon as they are completed." Id.*

*The Kaibab Tribe must have an opportunity to comment on the pending information and the draft study reports after they are revised further.*

*As it stands, Revised Draft Study Report 21 is largely incomplete because it does not include important information regarding protection, mitigation, and enhancement measures and either cumulative or unavoidable adverse impacts. Thus, the Commission should remand Revised Draft Study Report 21 to the UBRW for further revisions that are consistent with these comments and that fill in the substantial informational gaps.*

**UDWR Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**Chapter 1 Comments:**

**Kaibab Tribe Comment 1:**

*(Section 1.5)*

*The Kaibab Tribe previously commented that the UBRW must identify wildlife issues of tribal concern, as required by Study Plan 21. 2011 Comments at 49. However, the UBRW did not identify any additional issues in its latest draft study report. See Revised Draft Study Report 21 at 1-23. The UBRW must consult with the Kaibab Tribe on this matter and the final study report on wildlife resources must identify wildlife issues of tribal concern.*

**UDWR Response:**

**Your comment has been noted.**

**Kaibab Tribe Comment 2:**

*(Section 1.6)*

*The Kaibab Tribe previously commented that the UBRW failed to mention and account for impacts to wildlife species and habitats of tribal importance. 2011 Comments at 49. The UBRW did not identify any additional impact topics in its latest draft study report, however. See Revised Draft Study Report 21 at 1-23. The UBRW must consult with the Kaibab Tribe on this matter and the final study report on wildlife resources must identify impact topics of tribal concern.*

**UDWR Response:**

**Your comment has been noted.**

**Chapter 2 Comments:**

**USFWS Comment 1:**

*(Section 2.3, Page 2-1)*



**Assumptions:** This section should clarify that the true impacts of noise is to individual animals and not the habitat. Certainly, noise affects the use of habitats by wildlife.

**UDWRe Response:**

**Kaibab Tribe Comment 1:**

(Section 2.2)

*The Kaibab Tribe previously commented that the UBWR failed to reference any tribal data or information sources or indicate whether it attempted to obtain such data and information from the Kaibab Tribe. 2011 Comments at 50. The UBWR has still not identified any tribal data or information sources in its latest draft report. See Revised Draft Study Report 21 at 2-1. The final study report on wildlife resources must reference and consider tribal data or information sources or describe the UBWR's attempts to obtain such data from the Kaibab Tribe.*

**UDWRe Response:**

**Chapter 3 Comments:**

**Kaibab Tribe Comment 1:**

*The Kaibab Tribe previously commented that the UBWR failed to mention culturally sensitive areas in its description of the study area and baseline conditions. 2011 Comments at. The latest draft study report makes the same omission, however. See Revised Draft Study Report 21 at 3-1 to -20. The final study report on wildlife resources must describe the areas of cultural concern to the Kaibab Tribe and the baseline conditions.*

**UDWRe Response:**

**Chapter 4 Comments:**

**USFWS Comment 1:**

(Section 4.4.1.2, Page 4-3)

**Wildlife Habitats:**

*Stock ponds should not be referred to as areas that do not provide significant habitat values. Stock ponds are important for wildlife in some, particularly arid locations. Impacts to stock ponds should thus be included in the overall habitat impacts and reflected in the net wildlife habitat disturbance impact.*

**UDWRe Response:**

Your comment has been noted.

**USFWS Comment 2:**

(Section 4.4.1.3.2, Page 4-6)

*Indirect Impacts to Wildlife Populations: The discussion regarding restoration and revegetation is erroneous, as described in the previous comment. The included information and analyses are not supported by peer-reviewed literature. Conversely, several long-term monitoring studies conclude that Mojave Desert habitats do not revegetate easily (especially through re-seeding) and do not recover within two or three growing seasons. This comment applies to all subsequent comments in this report (sections 4.5, page 4-8; 4.6, page 4-10; 4.7, page 4-13).*

**UDWRe Response:****USFWS Comment 3:**

(Section 4.4.2.1.1.1, Page 4-7)

**General Wildlife Habitats:**

*The last two sentences of this section describe the effects of the release of water into drainages. However, this is inconsistent with the Aquatic Resources section which indicates that no releases will occur in drainages (Section 4.4, page 4-7 of Study Plan Report #2). Please be consistent throughout all of the reports. If invasive species are present in the pipeline, release of any water into drainages can be very detrimental to native species downstream.*

**UDWRe Response:****Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 21 will be updated with pending additional data and information concerning "impact analyses," PLP at P-1, this chapter must be considered incomplete. The final study report on wildlife resources must include the additional information concerning impact analyses, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

***Chapter 5 Comments:*****Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 21 will be updated with pending additional data and information concerning "protection, mitigation and enhancement measures," PLP at P-1, this chapter must be considered incomplete. The final study report on wildlife resources must include the additional information concerning mitigation, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

*Nonetheless, the UBWR describes the standard construction procedures it will implement during the construction, operation, and maintenance of the Lake Powell Pipeline Project Revised Draft Study Report 21 at 5-1 to -3. The UBWR does not describe any mitigation and monitoring measures to avoid and minimize impacts to wildlife species of cultural concern to the Kaibab Tribe, however. The UBWR is also required to consult with the Kaibab Tribe regarding such mitigation measures. The final study report on wildlife resources must include mitigation and monitoring measures for wildlife of species of cultural concern to the Kaibab Tribe, developed after consultation and in coordination with the Kaibab Tribe.*

**UDWRe Response:**

**Chapter 6 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 21 will be updated with pending additional data and information concerning "unavoidable adverse impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on wildlife resources must include the additional information concerning unavoidable adverse impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

**Chapter 7 Comments:**

**Kaibab Tribe Comment 1:**

*Since the UBWR states that Revised Draft Study Report 21 will be updated with pending additional data and information concerning "cumulative impacts," PLP at P-1, this chapter must be considered incomplete. The final study report on wildlife resources must include the additional information concerning cumulative impacts, but only after the public has been given an opportunity to review the new information and provide comments to the UBWR.*

**UDWRe Response:**

**Public review and comment is part of the FERC Integrated Licensing Process and will continue as FERC and the cooperating agencies prepare the EIS.**

## **Draft Study Report 22 – Alternatives Development:**

**General Comments:**

**Kaibab Tribe Comment 1:**

*As described below, the revised Draft Study Report 22: Alternatives Development (Nov. 30, 2015) ("Revised Draft Study Report 22") fails to address most of the Kaibab Tribe's previous comments on an earlier draft of the special status aquatic species and habitats study report. See 2011 Comments at 50-51. The UBWR states that Revised Draft Study Report 22 is "considered complete or nearly complete," PLP at P-1, but the UBWR's failure to address tribal concerns renders the report incomplete. Revised Draft Study Report 22 is noncompliant with Study Plan 22 and the Commission should remand the report to the UBWR for further revisions consistent with these comments.*

**UDWRe Response:**

**UDWRe's view is that Final Study Report 22 – Alternatives Development is in accordance with the FERC-approved Study Plan.**

**LPP Coalition Comment 1:**

*In Scoping Document 2 the Commission staff stated that the scoping process was intended to serve as a guide to issues and alternatives to be addressed in the Environmental Impact Statement (EIS). The public expressed concerns in the scoping process that should be addressed in the EIS, the Commission's comments read:*

*"As shown in both the transcripts of the scoping meetings and in Appendix A, many individuals have provided either oral or written scoping comments, or both, concerning the Lake Powell Pipeline proposal. Many of the public comments express similar concerns or issues:*

*1. "...increased water conservation can delay the need for the pipeline or other water supply projects,"<sup>124</sup>*

*However, UBWR's PLP did not sufficiently consider conservation as an alternative to the Project. The Commission Staff should require more detailed information on the potential of conservation programs to reduce water demand in the PLP.*

*Further, the Commission Staff said in Scoping 2 "we will consider and assess all reasonable alternatives to the proposed project and alternative locations or other changes to the proposal, as well as protection, mitigation, and enhancement measures identified by the Commission Staff, other agencies, Indian tribes, NGOs, and general public."<sup>125</sup>*

*Therefore, we request Commission Staff include the Locals Water Alternative<sup>126</sup> eLibrary 20130314-5010, 3-14-13 as one of the alternatives to be studied in the EIS. This alternative was submitted by Western Resource Advocates to FERC in 2013 when only 70,000 (AF) was coming to Washington County. The Project proposal has increased to 86,249 (AF). Consequently, we would add a water conservation program called Water Budget Rates that will save the extra water of 16,249.00 (AF). Water Budget Rates have proven they can save as much as half of the water used.<sup>127</sup>*

*The Irvine Ranch model decreased water use by 50% by using Water Budget Rates without yards and public spaces being hardscaped. This model uses science to determine how much water landscaping needs and sets a budget. If you go over the budget then you pay more. Studies tell us the issue is not that people need more water per person, but rather that people over-water their*

yards and landscapes because they are not fully informed about the maximum ability of the plant to take in water at any given period of time.

<sup>124</sup> FERC eLibrary 20080821-3005, *Scoping of Environmental Issues for the proposed Lake Powell Pipeline Project*, August 21, 2008, p.7

<sup>125</sup> *Scoping 2, Section 3.2 Our Alternatives to Proposed Action*, eLibrary 20080821-3005, 8-21-08

<sup>126</sup> Western Resources Advocates, *Locals Waters Alternative*, See at: <http://citizensfordixie.org/wp-content/uploads/2011/11/WRA-Alternative-LPP-full-report-20121.pdf>

<sup>127</sup> *Water Budget Rates*, See at: <http://citizensfordixie.org/water-workshop-resources/>

#### UDWRe Response:

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor's 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

#### LPP Coalition Comment 2:

##### **Study Plan: Section 22.2.2 Goals and Objectives**

- “Consider alternatives.....and any other alternatives identified during the Project
- List the pros and cons of each of the water supply alternatives based on characteristics of each alternative
- Document deficiencies of the alternatives considered inappropriate for inclusion in the environmental document prepared for the FERC license application.”<sup>129</sup>

However, UBWR only considered reverse osmosis as an alternative to the Project and did not consider the Local Waters Alternative <sup>130</sup> as one of the alternatives to be studied in the Study Report. The results of the Study Report did not give the pros of the all the alternatives. Further, the Study Report did not document deficiencies in the water conservation alternatives rejected by UBWR for NEPA analysis and why a lower gpcd is not possible.

<sup>129</sup> PLP Study Plan, p. 244

<sup>130</sup> Western Resource Advocates, *Local Waters Alternative*, eLibrary 20130314-5010, 3-14-13 See at: <http://citizensfordixie.org/wp-content/uploads/2011/11/WRA-Alternative-LPP-full-report-20121.pdf>

#### UDWRe Response:

**See the response to Andrew Kramer Comment 5 in the General Comments section.**

#### LPP Coalition Comment 3:

##### **Study Plan: Section 22.4.3 Issues and Data Needs**

*“Specific analyses to be completed as part of alternatives development will address the following:*

- What non-LPP Action and No Action alternatives can be developed based on the combinations of existing and future water supplies?*
- What water supply reliability issues exist for potential project alternatives?”<sup>131</sup>*

*UBWR used the wrong data for existing supply by only considering water that meets EPA standards for drinking water thereby reducing supply. Therefore, the UDWR did not include all the water as future water supply. The Commission Staff should require UBWR to include all possible supplies as future water supply so the Study Report is complete.*

*In addition, UBWR did not analyze the reliability issues with the proposed action alternative as required in the Study Plan. Therefore, the studies were not conducted as provided for in the approved Study Plan and the Commission Staff should require this analysis before the EIS process begins.*

<sup>131</sup> PLP Study Plan, p. 246 (emphasis added)

**UDWRe Response:**

**Your comment has been noted.**

**LPP Coalition Comment 4:**

**Study Plan: Section 22.6.2 Task 1 – Conceptual Project Development,**

*“Identify the No Action Alternative consisting of existing and planned future water supply projects, water management actions, and other measures (e.g., ongoing water conservation and reuse) that each District would take in the absence of the LPP.”<sup>132</sup>*

*UBWR is not considering the potential of increased water conservation and reuse to reduce water demand. Thus, UBWR is using the wrong data and excluding cheaper alternatives in the PLP. The Commission staff must rigorously explore and objectively evaluate all reasonable alternatives. The staff should also require UBWR to provide new accurate, validated 2015 data to comply with task one of the Study Plan.*

<sup>132</sup> PLP Study Plan, p. 247

**UDWRe Response:**

**The LPP Project is intended to augment available water with a reliable source from a confirmed water right. In order to responsibly meet the needs of the growing regional population, multiple strategies, including conservation, will need to be implemented simultaneously.**

**The region benefiting most from the potential LPP already met the Governor’s 25 percent water conservation goal 10 years earlier than the deadline. It has started working towards an additional 10 percent conservation goal. Water conservation will continue to be a high regional and state priority.**

## ***Executive Summary Comments:***

### **LPP Coalition Comment 1:**

*(Section ES.2, Page ES-1)*

#### **Methodology**

*“The alternatives were evaluated on their ability to meet the equivalent population water needs with and without implementing the LPP Project.”<sup>128</sup>*

*UBRW makes this major error in methodology throughout the PLP. The alternatives do not have to meet equivalent population water needs. The goal is to compare alternatives that can supply the same amount of water 86,294 (AF) and not for population needs. Therefore, UBWR used the wrong data and varied from the specific requirement of the approved Study Plan. Thus, the Study Report skipped a critical step in the analysis. UBWR must provide the accurate comparison of alternatives in the PLP that use the same amount of water.*

<sup>128</sup> PLP Study Report, p. ES-1 (emphasis added)

#### **UDWRe Response:**



### **Lisa Rutherford and Paul Van Dam Comment 90:**

*Draft Study Plan 22 – Alternatives*

#### ***Executive Summary***

##### ***ES.3 No Lake Powell Water Alternatives***

##### ***ES.3.1 WCWCD***

*The WCWCD No Lake Powell Water Alternative would meet the LPP equivalent population demand beginning in 2025. It would ultimately need to provide approximately 82,249 acre-feet per year of supply by 2052. Two potential alternatives were developed and evaluated for WCWCD.*

- Treatment of Virgin River water supplies and wastewater reuse effluent by reverse osmosis (RO) and eliminating residential outdoor irrigation with potable water*
- Treatment of Virgin River water supplies and wastewater reuse effluent by reverse osmosis (RO) and eliminating residential outdoor irrigation with potable water, and conveying available groundwater from Kane County to Washington County by pipeline*

#### ***COMMENT***

*Both of the options being presented by Applicant as only options securing water under No Lake Powell Water Alternatives and unnecessary and should be rejected. Applicant should not be allowed to apply the cost of RO treatment to all water that might be available to meet Washington County's needs. Earlier information provided in these comments attest to the fact that there are many opportunities available to our county for our water needs. Applicant and county have not adequately explored additional storage facilities, etc. to make best use our local resources. Also, not all water that could be available in the future has been included in Applicant's information particularly agricultural conversions, as was*



*noted in the 2015 legislative audit of Utah's Division of Water Resources, Applicant.*

**UDWRe Response:**

***Chapter 1 Comments:***

**Lisa Rutherford and Paul Van Dam Comment 91:**

*Chapter 1 Introduction*

***1.1 Introduction (Page 1-1)***

*The LPP Project and these alternatives will be analyzed in an environmental impact statement (EIS) to be prepared by the Federal Energy Regulatory Commission (Commission) in compliance with the National Environmental Policy Act (NEPA).*

***COMMENT***

*Many Washington County citizens are hoping that FERC will do a “vigorous” analysis of the LPP and these alternative feeling that many opportunities still exist for avoiding the expense and debt created by an unnecessary water project.*

**UDWRe Response:**

**Your comment has been noted.**

***Chapter 3 Comments:***

**LPP Coalition Comment 1:**

*(Section 3.3.1.2, Page 3-5)*

***Reverse Osmosis Treatment of Future Reclaimed Wastewater Effluent***

*“The existing St. George Wastewater Treatment Plant sends a portion of its treated effluent to the St. George Wastewater Reuse Plant for additional treatment and reuse as secondary irrigation water. The maximum capacity of the existing Reuse Plant is 7,300 acre-feet per year. The reuse water is used as a secondary irrigation water supply from April through October, and currently is not stored during the winter months. The City of St. George has received permits to construct two storage reservoirs to store the reuse water during the winter months and increase the annual reuse of treated effluent. The reuse water would also be stored in the future Warner Valley Reservoir. The maximum projected wastewater treatment plant effluent available for use in 2060 is projected to be **39,500** acre-feet per year.*

*This projected water reuse supply is estimated based on: 1) the projected 2060 combined populations of St. George, Washington, Ivins and Santa Clara, which are the communities served by the St. George Wastewater Treatment Plant; 2) the 2010 total M&I water use less 16 percent conservation; and 3) and a 27 percent wastewater effluent to total M&I water supply ratio. The maximum projected wastewater treatment plant effluent available for reuse in 2025 is projected to be 16,774 acre-feet per year, increasing to 34,453 acre-feet per year by 2052. The RO treatment of 34,453 acre-feet per year wastewater reuse effluent would yield approximately 31,000 acre-feet of product water and 3,454 acre-feet of brine for evaporation and disposal. The RO treated effluent*

*could then be disinfected and delivered for culinary use. This potential component of the No Lake Powell Water Alternative would require a new RO treatment facility or increasing the capacity of an RO facility treating water stored in Warner Valley Reservoir, and also could face a significant public acceptance challenge as well as regulatory approvals.”<sup>133</sup>*

*UBWR only identifies 7800 (AF) of reuse by 2060. However, the information above in Section 3.3.1.2 contradicts that claim and identifies that there is 39,500 (AF) of reuse water possible by 2060. Therefore, 39,500 (AF) of reuse water should be added to available future supplies.*

<sup>133</sup> PLP Study Report, p.3-5, (emphasis added)

**UDWRe Response:**

**Reuse water, in addition to 7,300 acre feet per year obtained from maximizing the existing wastewater and the 3,900 acre feet per year currently being used, is planned to be used by 2060 and is included in the Water Needs Assessment. This additional supply is dependent on an increase in potable water supply for indoor use and additional storage capacity to capture winter flows when there are no system demands.**

**Lisa Rutherford and Paul Van Dam Comment 92:**

*Chapter 3 Conceptual Project Alternatives*

**3.3.1.3 Eliminating Potable Water Use for Outdoor Residential Watering (Page 3-6)**

*These potable water uses would total 130,245 acre-feet per year by 2052, which would be equal to the potable water demand. Gradually eliminating residential outdoor potable water use starting in 2025 would provide the growing population with potable water for indoor use through 2045; however, repurposing residential outdoor potable water use to indoor use would not increase the water supply and would have to be accompanied by adding another water supply to meet the growing demand. By 2045, all potable water would be used for indoor purposes, including residential indoor, commercial, institutional and industrial use.*

**COMMENT**

*With a county population of 468,990 in 2050, this 130,245 would result in a potable water usage of 248 gpcd, still far above other desert communities.*

*“Total Future Water Supplies” in the “Local Waters Alternative to the Lake Powell Pipeline (WRA)” range from 116,300 – 138,000 AFY, exceeding projected demands after conservation (about 115,000 AFY).*

*13,700-35,200 afy of ag conversion is shown in WRA’s “Local Waters Alternative to the Lake Powell Pipeline.”*

**UDWRe Response:**

**Chapter 4 Comments:**

**LPP Coalition Comment 1:**

*(Section 4.1.2.1, Page 4-2)*

### **WCWCD Total Conceptual Cost Opinion**

*“The reverse osmosis (RO) treatment of Virgin River water, including brine disposal and operations and maintenance (O&M), is estimated to have a present worth (50 years) total conceptual cost opinion of \$1,067,935,000 without financing costs. RO treatment of Virgin River water and reclaimed wastewater to eventual potable water use, including brine disposal and O&M, is estimated to have a present worth (50 years) total conceptual cost opinion of \$1,067,935,000 without financing costs. The Warner Valley Reservoir total conceptual cost opinion of \$341,088,000 without financing costs. The costs associated with eliminating residential outdoor water use of potable water include the costs the District would incur to develop, issue and enforce regulations and the costs associated with changing landscaping practices. Eliminating residential outdoor water use and removing lawns and plants, shrubs, and trees and replacing them with hardened surfaces and desert landscaping would result in a total conceptual cost opinion of **\$94,061,000**. Purchasing and conveying available groundwater from Kane County to Washington County by pipeline would have a total conceptual cost opinion of \$155,000,000 without financing costs.*

*Therefore, the total conceptual cost opinion (present worth 50 years) for the WCWCD conceptual No Lake Powell Water Alternatives would be \$1,503,084,000 for RO treatment of Virgin River water and reused wastewater effluent, the enlarged Warner Valley Reservoir, and eliminating residential outdoor watering to meet the 82,249 acre-foot demand in 2052, compared to a total conceptual cost opinion of \$1,658,084,000 for the RO plant using Virgin River water and wastewater reuse effluent, the enlarged Warner Valley Reservoir, eliminating residential outdoor irrigation with potable water, and conveying groundwater from Kane County to Washington County. Therefore, implementing the RO treatment of Virgin River water and wastewater reuse effluent, and eliminating residential outdoor irrigation with potable water, is the most cost effective conceptual No Lake Powell Water Alternative for WCWCD.”*

*UBWR makes a major error in calculating that the cost to convert potable water from outside use to inside use will cost \$94,061,000. However, in the No LPP Alternative it only uses 17,219 (AF) of outdoor water. This error needs to be corrected throughout the PLP before the EIS process begins.*

#### *Recommended No Lake Powell Water Alternative for NEPA Analysis*

*54,782 (AF) diverted Virgin River, RO treatment  
14,248 (AF) reuse, RO treatment  
17,219 (AF) outdoor water culinary  
86,249 (AF) total*

*Further, a WCWCD 2010 Water Conservation Plan shows the cost of a reverse osmosis water plant would have a capital cost of \$115,600,000, with annual operation and maintenance cost of \$11,975,000; the cost of Brine Recovery and Disposal Capital would be \$77,576,000 and O & M would be \$3,877,000.<sup>134</sup> Also, costs per acre foot of treatment have been coming down and it could cost less than the cost of opinion of UBWR of a billion dollars for the cost of the reverse osmosis in the No LPP Alternative. Therefore, UBWR should clearly detail all costs, including the cost per gallon, and state how they were derived in the alternatives so they can be compared for their cost/benefit. The Commission Staff must require UBWR to provide accurate detailed*

information on how it made its conclusions on costs so they can be verified in the final Study Report before the EIS process begins.

<sup>134</sup> Washington County Water Conservancy Water Conservation Plan 2010, see at: <http://citizensfordixie.org/wp-content/uploads/2011/11/WC-Plan-2010.pdf>

**UDWRe Response:**



**LPP Coalition Comment 2:**

(Section 4.1.4.1, Page 4-4)

**WCWCD Land Use Considerations**

*“Land use considerations associated with the WCWCD conceptual No Lake Powell Water Alternatives would include **loss of large areas of grazing land** from constructing and operating the RO water treatment facility, evaporation ponds and brine disposal, and the enlarged Warner Valley Reservoir. Converting traditional residential landscapes to hardened surfaces with desert landscape features would alter the vegetation composition on land parcels, but would not change the residential land use designations or classifications. Constructing and operating a water conveyance pipeline from Kane County to Washington County would restrict future land use along the pipeline right-of-way”.*<sup>135</sup>

*We disagree with the sufficiency of the study results that claim the conceptual No Lake Powell Pipeline Alternatives would include loss of large areas of grazing land due to the fact UBWR does not include any more agricultural rights in the alternatives. UBWR only claims 22,960 (AF) of agricultural rights converting to culinary and secondary use by 2060. Further, UBWR fails to account for all the 87,000 (AF) of irrigation water rights that were in the County in 1990. We also point out in our comments in Study Report No. 19 Water Needs Assessment all the secondary water that is available by 2060. Therefore, this conclusion has no basis in fact and should be deleted from the PLP.*

<sup>135</sup> PLP Study Report 22, p.4-4 (emphasis added)

**UDWRe Response:**



**Chapter 5 Comments:**

**Kaibab Tribe Comment 1:**

(Section 5.1.1.6)

*The Kaibab Tribe previously commented that "social acceptance" is not one of the enumerated criteria in Study Plan 22, and that the UBWR did not explain its inclusion in the draft study report or explain the methodology to evaluate social acceptance. 2011 Comments at 51.*

The latest draft study report also applies the "social acceptance" criteria without adequate explanation. See Revised Draft Study Report 22 at 5-2 to -4. The final study report on alternatives development must either remove the "social acceptance" criterion or explain the methodology and why it is important.

**UDWRe Response:**



**Chapter 6 Comments:**

**LPP Coalition Comment 1:**

(Section 6.1.1, Page 6-1)

**Re-Purposing Potable Water Use**

*"The No Lake Powell Water Alternative would permanently eliminate residential outdoor potable water use in Washington County, re-purposing the portion of potable water used for residential outdoor watering to indoor potable use. Projections of future water use through 2060 account for population growth, climate change (projected 6 percent reduction of Virgin River flows by 2050), water conservation (35 percent reduction in per capita water use from 2000 to 2060), and a water planning reserve (10 percent) to avoid utilizing all available water supplies in meeting demands. Potable water in Washington County is consumed for residential indoor and outdoor uses, commercial uses, institutional uses, and industrial uses. These potable water uses would total 130,245 acre-feet per year by 2052, which would be equal to the potable water demand. Gradually eliminating residential outdoor potable water use starting in 2025 would provide the growing population with potable water for indoor use through 2045; however, repurposing residential outdoor potable water use to indoor use would not increase the water supply and would have to be accompanied by adding another water supply to meet the growing demand. By 2045, all potable water would be used for indoor purposes, including residential indoor, commercial, institutional and industrial use. Re-purposing residential outdoor potable water use to indoor potable use would require converting traditional residential outdoor landscapes and uses to desert landscapes compatible with the local climate. Residential water users would be responsible for converting their traditional outdoor landscapes to desert landscapes. Secondary water use in Washington County, totaling 8,505 acre-feet per year, would continue because the secondary water cannot be used for potable water without advanced treatment."*<sup>136</sup>

UBWR continues the major error in the alternative analysis that outdoor water use would be eliminated. We detailed the error in our previous comments. In a previous section it was only 17,219 ac ft. of outdoor water combined with RO treatment in this Alternative. This section on Potable Water Use is lacking the cost and the amount of culinary water. UBWR needs to clarify and the correct information and compare this to all Alternatives in cost and amount of water. UBWR misinterpreted the results in the Study Report and varied from the specific requirement of the approved Study Plan (Section 22.2.2) on (page 244). The Commission Staff should require sufficient accurate information for the EIS.

<sup>136</sup> PLP, Study Report, p. 6-1 (emphasis added)

**UDWRe Response:**

## **Draft Study Report 23 – Ethnographic Resources:**

### ***General Comments:***

#### **Kaibab Tribe Comment 1:**

*The Kaibab Tribe's comments regarding the revised Draft Study Report 23: Ethnographic Resources (Nov. 30, 2015) ("Revised Draft Study Report 23") are contained in the separately filed, non-public comments on Revised Draft Study Report 23, and its attachments.*

#### **UDWRe Response:**

**Confidential responses have been prepared to the Kaibab Tribe's comments and are filed with FERC as a non-public document, to maintain confidentiality regarding locations and features of ethnographic resources important to the involved Native American tribes.**